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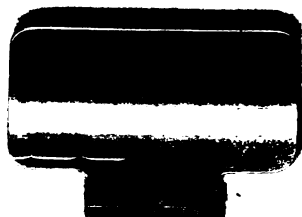
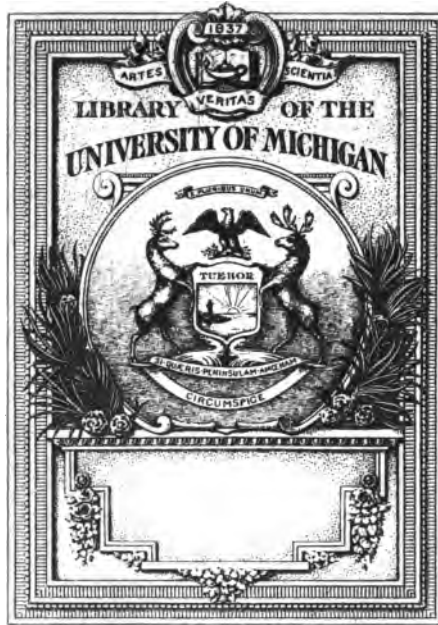
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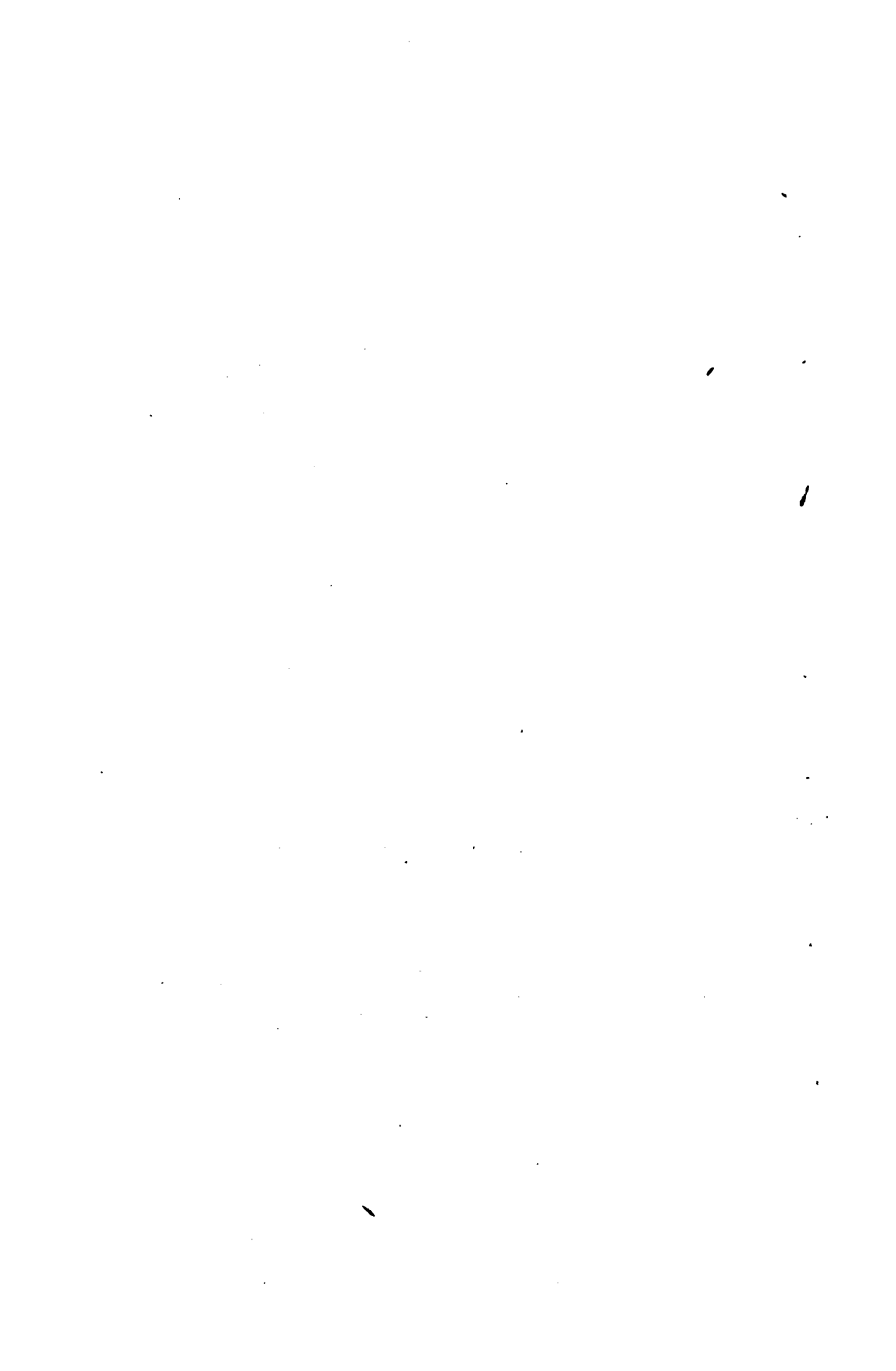
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DEPARTMENT OF COMMERCE AND LABOR
BUREAU OF CORPORATIONS

LUTHER CONANT, Jr., Commissioner

COTTON TARE



SEPTEMBER 3, 1912



WASHINGTON
GOVERNMENT PRINTING OFFICE
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CONTENTS.

	Page.
Letters of transmittal.....	v
Letter of submittal.....	vii
Introductory.....	1
Methods of packing and handling cotton.....	1
Egyptian cotton.....	3
Indian cotton.....	3
American cotton.....	4
Baling and sampling.....	4
Compressing and patching.....	5
Cotton bagging.....	6
American cotton poorly protected.....	8
Tare rules.....	8
Tare rules of cotton exchanges and cotton markets in the United States.....	9
Tare rules of New Orleans Cotton Exchange.....	9
Tare rules of New York Cotton Exchange.....	10
Tare rules of other American exchanges and markets.....	10
Tare rules adopted by American cotton spinners.....	11
Tare rules of European markets.....	11
C. i. f. and 6 per cent contract.....	12
Rules governing the c. i. f. and 6 per cent contract.....	13
Franchise.....	14
Mutual allowances.....	15
Draft.....	15
Comparison of tare rules in Liverpool, Bremen, and Havre.....	16
Purpose and effect of "c. i. f. and 6 per cent" contract.....	17
Method of ascertaining actual tare.....	18
Statement of tare—Liverpool.....	18
Statement of tare—Havre.....	19
Statement of tare—Bremen.....	19
Pro forma comparison of computations, Bremen, Havre, and Liverpool.....	19
Inaccuracy of tare tests.....	22
"Friendly allowances".....	23
Overtare.....	23
Reason for overtare.....	24
Proportion of American cotton exports which are overtared.....	26
Extent to which the tare on overtared cotton exceeds the amount allowed under the rules.....	27
Effect of the c. i. f. and 6 per cent contract on the American exporter.....	28
Effect of tare allowances on the price paid the producer.....	30
Fallacy of argument that producer benefits from the tare on his cotton.....	30
How tare is considered in determining the price paid the producer.....	32
Net effect upon the farmer.....	38

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	Page.
Remedies proposed for tare evils.....	39
Suggestion that tare be marked on bale at the gin.....	40
Suggestion for standardizing bagging.....	41
Suggestion for actual tests.....	43
Practicability of compressing cotton at the gin.....	43
Economic advantages in using less tare.....	46
Advantages in the use of lighter bagging.....	47
Economic advantages of gin compression.....	48
Cotton sold on a false-weight basis.....	49
Attitude of the cotton trade toward changing existing tare customs.....	50
Conclusions.....	51

LETTERS OF TRANSMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
OFFICE OF THE SECRETARY,
Washington, September 3, 1912.

SIR: I have the honor to transmit herewith a Report of the Commissioner of Corporations on Cotton Tare, this report dealing largely with the operation of contracts of foreign cotton exchanges.

Very respectfully,

CHARLES NAGEL,
Secretary.

The PRESIDENT.

DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF CORPORATIONS,
Washington, September 3, 1912.

SIR: I have the honor to transmit herewith a Report on Cotton Tare, made to the President under your direction and in accordance with the law creating the Bureau of Corporations. This report deals largely with the operation of contracts of foreign cotton exchanges.

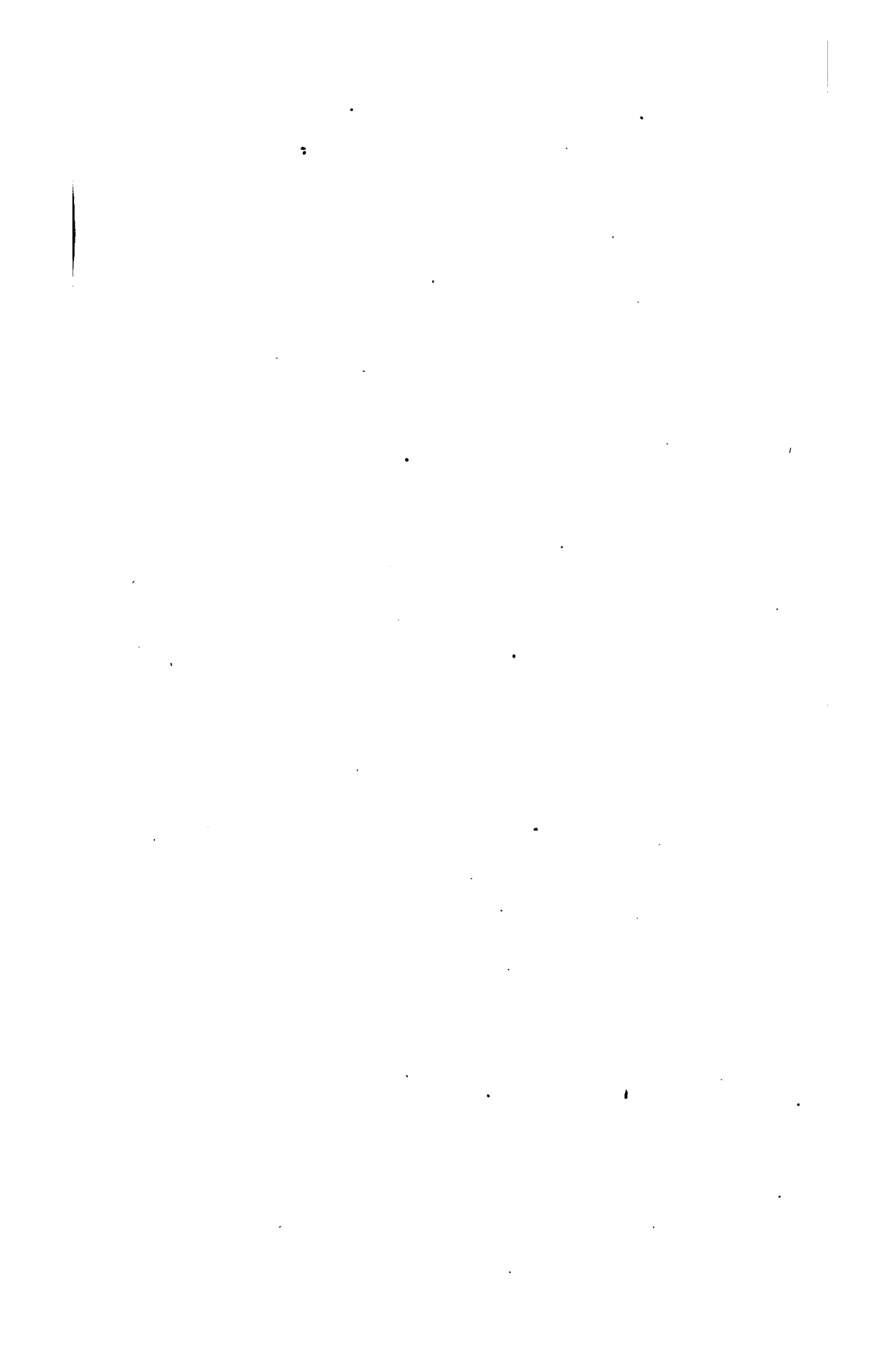
I desire to mention as especially contributing to the preparation of this report the name of Mr. T. M. Robertson, of this Bureau.

Very respectfully,

LUTHER CONANT, Jr.,
Commissioner.

To HON. CHARLES NAGEL,
Secretary of Commerce and Labor.

v



LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF CORPORATIONS,
Washington, September 3, 1912.

SIR: I have the honor to submit herewith a report on cotton tare. This investigation was undertaken on complaint that producers of cotton were being subjected to serious injury because of excessive deductions for tare (bagging and ties) under the rules of leading European markets. The evidence gathered, however, indicates that competition in the cotton trade is so active that the producer does not ordinarily suffer. Nevertheless, these rules result in serious evils. They complicate price calculations by injecting into the business an unnecessary element of chance. Furthermore, they involve economic waste. If this does not injure the producer or the merchant or the spinner, it must impose an unnecessary burden upon the consumer of cotton goods.

The American producer sells his cotton gross weight. In the export trade, however, practically all cotton is sold net weight. A large part of the cotton exported to Europe is sold under what are known in the trade as "c. i. f. and 6 per cent" terms, which provide that the net invoice weight shall be found by deducting 6 per cent of the gross weight. When this rule was originally established, many years ago, an ordinary bale of cotton weighed about 400 pounds gross, and a deduction of 6 per cent fairly represented the tare and "draft" (the latter an arbitrary allowance of about 2 pounds per bale). Since then the gross weight of the bale has gradually increased to approximately 500 pounds, without a corresponding increase in the amount of tare. Roughly speaking, the tare on a bale of American cotton as it comes from the hands of the producer is from 19 to 24 pounds per bale, or, to use an average figure, about 22 pounds. This means that a bale of cotton weighing 500 pounds contains 478 pounds net. A deduction of 6 per cent from a gross weight of 500 pounds leaves only 470 pounds net, or 8 pounds less than the actual weight of the net cotton in the bale.

When the cotton reaches the foreign market, the buyer has the right to call for an actual test for tare. In case of such test, the rules governing the contract fix a maximum tare allowance of about

5.3 per cent, or, say, $26\frac{1}{2}$ pounds for a standard bale. In other words, while the contract requires a deduction of 30 pounds per bale, the rules governing tests under the contract allow only $26\frac{1}{2}$ pounds, a discrepancy of $3\frac{1}{2}$ pounds per bale.

The cotton exporter is therefore confronted with two problems—first, how to take care of the difference between the tare on the bale when he buys it and what is deducted when he sells it; and, second, how to allow for the $3\frac{1}{2}$ pounds difference between the 30 pounds deducted in his invoice and the $26\frac{1}{2}$ pounds allowed in the final settlement in case of actual test.

Some cotton merchants argue that these facts are thoroughly understood by the trade and are adjusted in the price. Others, however, contend that since they are obliged to deduct 6 per cent in their invoices they are virtually forced to have at least 6 per cent tare on their cotton when it is shipped abroad.

Whether or not the contract actually forces the exporter to add unnecessary tare to his cotton, there can be no doubt that such addition of tare has been its practical result. The exporter naturally adds tare up to the amount allowed by the rules (roughly, $26\frac{1}{2}$ pounds). He does this by "patching;" that is, placing strips of bagging on the bale. A small part of such patching is usually necessary to cover sample holes. However, since the exporter in making out his invoice must deduct 6 per cent, he frequently goes further and adds tare up to at least 6 per cent of the total weight of the bale; sometimes he adds even more.

Obviously, if the exporter makes a complete adjustment in the price, and also adjusts by adding tare, he makes a profit on such added tare. If, however, complete adjustment is not made in the price, this addition of tare becomes simply a means of protection against loss, although in the trade it is usually spoken of as a "profit on patching."

EFFECT OF THESE TARE RULES ON THE AMERICAN PRODUCER.

The important question involved in the investigation was how this 6 per cent contract and the accompanying rules affect the American producer. As already stated, many producers believe that they are injured because of the 6 per cent deduction, but the investigation indicates that competition in the cotton trade is so active that ordinarily this is not the case. Most exporters take account of their so-called "profit on patching" in arriving at the price which they actually pay for cotton. In fact, some state that in figuring upon their buying prices they make no specific allowance for profit but depend upon the profit or saving they derive from patching; in other words, they do not deduct the full 6 per cent for tare. There was very general unanimity of opinion among buyers that the producer is not

injured by this rule. But it is hardly probable that he always escapes, and whether or not he escapes depends, as in the case of other factors, on the activity of competition.

Granting that the price of cotton is in no way affected by the 6 per cent rule, it is nevertheless highly objectionable. It results in changing the gross weight of the bale, and thus introduces an avoidable element of chance, both as to the actual amount of cotton to be paid for and as to price. Furthermore, the rule results in economic waste, because it encourages the use of unnecessary bagging. This waste consists not only of the first cost of the patches and the freight upon them, and the added labor of handling, but the added cost of settling numerous controversies.

OTHER TARE EVILS.

There are other tare evils than those due to the 6 per cent contract. Among these are the wide differences in the amount of bagging used in different sections of the cotton belt, and the careless way in which the bagging is put on. Probably no other important farm product receives so little attention with respect to the covering as does cotton.

REMEDIES.

The ideal remedy for all these evils is the standardization of the tare to be put on a bale of cotton, by making it a definite or readily ascertainable amount, so that the net weight may be determined without controversy or test. So far as the bands or ties are concerned, there is no real difficulty. These are practically standardized now. There is, however, a wide variation in the weight and character of bagging used, and until this is standardized a complete solution of the tare problem can not be accomplished.

There is some opinion in favor of legislation to bring about a standardization of bagging, both in respect to the amount used on a bale and also as to the weight per yard. It would appear, however, that before resorting to legislation on this matter every reasonable effort should be made to secure results by the concerted action of cotton interests. However, the present careless and irregular methods of covering cotton, with their attendant evils, if allowed to go uncorrected, seem likely to invite legislation.

Pending the adoption of a thorough remedy for tare evils in general, there seems no doubt that substantial benefits could be brought about by modifying the 6 per cent contract so as to provide for a deduction of, say, only 5 per cent for tare, or some percentage which would still more accurately represent the amount of covering actually necessary to protect the cotton. Whatever deduction be determined upon, the requirements of the contract should

be identical with the allowance established by the rules. Such a simple remedy would largely remove any excuse for putting on an unnecessary amount of tare, although it probably would not completely terminate the practice. It should greatly reduce the expense of controversies over tare, and simplify the price calculations of merchants.

It is true that this 6 per cent contract is enforced by foreign exchanges, which of course are beyond the jurisdiction of the United States. Fortunately, however, European merchants apparently are in favor of remedying tare evils. It appears, therefore, that this is an opportune time for positive action on this 6 per cent contract.

Very respectfully,

LUTHER CONANT, JR.,
Commissioner of Corporations.

The PRESIDENT.

REPORT OF THE COMMISSIONER OF CORPORATIONS ON COTTON TARE.

INTRODUCTORY.

Tare, in its broadest acceptation, is an allowance made to purchasers by deducting from the gross weight of the commodity purchased the weight of the boxes, casks, etc., in which it is packed. Ordinarily, the determination of the exact amount of tare on a package of goods is so simple that there is no occasion for controversy. In the case of American cotton, however, there are peculiar difficulties in the way of determining the exact weight of the packing material on a bale. As a result, an enormous amount of controversy has been developed. Certain rules and practices, more or less complicated, have been adopted by the trade in an attempt to adjust any differences between buyers and sellers arising in respect to tare. These rules and practices are a source of serious evil in the cotton trade. What these rules and practices are, the reasons for their adoption, and the manner and result of their application are taken up and discussed, in detail, in this report. Proposed remedies for tare evils and certain obstacles in the way of applying such remedies are also presented.

In connection with this investigation the principal cotton markets of Europe and of the United States were visited. Facts, opinions, and suggestions were obtained by personal interviews and by correspondence with many of the leading cotton merchants and manufacturers and officials of cotton exchanges in this country and abroad. The information thus obtained forms the basis of this report.

METHODS OF PACKING AND HANDLING COTTON.

Cotton is produced and marketed under conditions entirely different from those surrounding any other commodity. It is the only important agricultural product that is not and can not generally be prepared for the market on the farm. The producer of grain can thrash it on the farm; he can haul it to market loose or he can purchase bags and pack it on the farm. Fruit and vegetable growers can procure crates, boxes, or barrels and pack their stuff for market. The producer of hay, or other forage, can bale his product in the

field. The stock raiser can haul his hogs or drive his cattle, sheep, and horses to the railroad and load them in the cars. In fact, practically everything the farmer raises, except cotton, can be prepared and packed for shipment on the farm. It is true that some large growers have their own gins and prepare their cotton for market, but this represents a very small proportion of the crop. The farmer usually hauls it to a ginnery to have the lint separated from the seed and packed into bales. He can usually sell his cotton at the gin if he wishes to do so. Often, however, it is not desirable to do this, and he must either store it at the gin, let it lie exposed to the weather, or haul it back home. The labor and inconvenience thus attaching to the preparation of cotton for market are probably much greater than for any other farm product.

When cotton is packed ready for market, conditions develop that are not found in the case of any other product. Grain, like cotton, is sold by weight, and whether it is sold loose or in bags there is no difficulty whatever in ascertaining the net weight. The same is true of hay, the baling material of which is so light as to be of no material importance. Fruits and vegetables sold by measure are put up in packages of standard capacity, and there need be no question as to the net quantity in a package. Products sold by the dozen or by the piece carry with them no uncertainty as to quantity. As a rule, packages in which these commodities are sold remain intact from the time they are originally prepared for shipment until they reach the final purchaser. Nothing is added to or taken from the packing. This is not true of American cotton. After a bale of cotton leaves the hands of the producer samples are taken from it whenever it changes hands. For this purpose the cover is cut. The holes thus made have to be covered ("patched"). This necessitates the adding of weight to the packing, so that when the bale reaches its final destination there are several pounds more tare on it than it originally had. The bales are re-pressed ("compressed") to a greater density (see p. 5) after leaving the ginnery, and it is in this process of re-pressing that the additional tare is put on.

The three principal cotton-producing countries of the world are the United States, British India, and Egypt, ranking in the order named. These countries produce more than 85 per cent of the commercial cotton crop of the world. The methods employed in packing and marketing cotton in Egypt and India are very different from those employed in the United States. American methods are constantly being contrasted with Egyptian and Indian methods, very much to the disadvantage of this country. It is therefore desirable to describe briefly the customs in these countries, with particular reference to their bearing on the question of tare.

Egyptian cotton.

Egyptian cotton, unlike American cotton, is assembled at central points before it is ginned; that is, before the lint is separated from the seed. It is ginned at these central points and packed in bales compressed to a density of 32 pounds to the cubic foot. The standard bale weighs 720 pounds net. Each bale is entirely covered with $4\frac{1}{2}$ pounds of a light, closely woven burlap canvas¹ and is "tied" with 11 iron bands weighing 17.6 pounds. The actual tare on a standard bale of Egyptian cotton is therefore 22 pounds, or 3 per cent of its gross weight. When the cotton is sold a hole is cut in the canvas, from which a sample is drawn to determine the grade. These sample holes are covered by sewing over them light burlap patches of uniform size and weight.

The Liverpool contract for the sale of Egyptian cotton calls for 36,000 pounds net, or the equivalent of 50 standard bales. The contract provides that no bale shall weigh less than 560 pounds nor more than 850 pounds gross. The usual weight is 720 pounds net. The prescribed method of ascertaining the tare is to strip a few bales, weigh the canvas and bands, and apply the average weight of the tare on the stripped bales to the entire lot. In actual practice this is seldom done. The cotton is so uniformly packed and such scrupulous care is exercised in putting on canvas that there is rarely ever any question as to the correctness of the tare shown in the invoice. This does not include the weight of patches. Instead of a direct deduction for the weight of the patches over the sample holes it is the custom to weigh "patch against patch"; that is to say, if a bale has two or three patches on it, when it is weighed the same number of patches are put in the balances opposite the bale to balance those on the bale. In this way the exact net weight of the cotton is found by deducting only the weight of the tare put on at the gin, as shown in the invoice.

By thus using a standard canvas to cover the bale at the gin, standard bands, and a standard patch to cover sample holes, and by making the bale practically uniform in size, the net weight of the cotton is readily determined, and usually without actual test.

Indian cotton.

Cotton in British India is assembled in the same manner as in Egypt. Indian cotton, however, is packed in much lighter and smaller bales than Egyptian cotton. It is pressed to a density of 40 pounds per cubic foot. The standard Indian bale is either 392 or 500 pounds net, depending upon the district from which it comes.

¹ In Europe the covering used on cotton (no matter what its character) is designated as "canvas," while in the United States it is called "bagging." The terms "canvas" and "bagging" as used in this report are synonymous.

The bales are entirely covered with a light canvas weighing $2\frac{1}{2}$ pounds to the bale. The bands weigh 6 pounds, thus making the standard tare $8\frac{1}{2}$ pounds per bale, or about 2.1 per cent of the gross weight.

Indian cotton is sampled and sample holes are patched in the same manner as Egyptian. Tare is determined in the same way, and there is equal freedom from controversy on account of tare.

American cotton.

In the United States cotton is not assembled and sold in the seed—that is, before it is ginned—to any considerable extent as in India and Egypt. Some of the larger growers have their own gins, but, as before stated, the farmer ordinarily hauls his cotton to a public gin-
nery, of which there are a great number scattered throughout the cotton belt, to have the lint separated from the seed and packed in bales. While ordinarily it would be possible to sell cotton at the gin, for various reasons this frequently is not desirable. It may be that at the time the cotton is ginned the price is not satisfactory, or the farmer may have obligated himself to sell his cotton elsewhere. If it is not sold at the gin, it is usually hauled back home or to a warehouse to remain there until the owner is ready to sell it.

Baling and sampling.—When cotton is baled at the gin it is not, as a rule, entirely covered with bagging. There is usually a space on each side of the bale that is exposed. In some sections the bales are entirely covered at the gin, but cotton so packed represents only a very small percentage of the entire crop. A sufficient number of iron bands (usually six) are used to “tie” the bale in a manner to protect it from damage in handling. The usual weight of bagging and ties put on a bale at the gin is 19 to 24 pounds, or from 3.8 to 4.8 per cent of the gross weight of a 500-pound bale, but this varies somewhat, according to the character of covering used. Bagging is made in weights varying from $1\frac{1}{2}$ pounds to as much as 3 pounds per yard. That most commonly used weighs 2 pounds to the yard. The bands almost universally used weigh $1\frac{1}{2}$ pounds each.

Speaking broadly, a standard American bale weighs 500 pounds gross. When one speaks of a bale of cotton he has 500 pounds in mind. In the foreign trade, however, in the settlement of contracts, it may be said that three standards are recognized. The standard for cotton from Texas and Arkansas is fixed at 530 pounds per bale; that for all other Gulf cotton, including Alabama and Oklahoma, at 510 pounds; while that from other sections is fixed at 500 pounds. In actual practice there is great lack of uniformity, the weights varying from 300 pounds to over 600 pounds, and in some districts bales are packed weighing as much as 900 pounds. In some American markets the minimum merchantable bale is 300 pounds, while the minimum prescribed in other markets is 400 pounds.

In so far as the amount of bagging and ties is concerned, cotton is usually sold by the farmer in exactly the condition in which it leaves the ginnery. He adds nothing to the wrapping; he sells his cotton gross weight—that is, the bales are weighed and he receives pay for the gross number of pounds—nothing being deducted from the gross weight for tare, unless it exceeds the usual weight of 19 to 24 pounds per bale.¹

When the farmer sells his cotton a hole is cut in the side of the bale in order that a sample may be drawn from which to determine the grade, and this sampling is usually repeated as often as it changes ownership. In many markets two samples are drawn, one from each side of the bale, every time it changes hands. This process of drawing samples leaves the bales in such a ragged and unprotected condition that, as stated, it is considered desirable to cover the holes before shipment is made over a great distance, otherwise dirt and trash would accumulate on the cotton and there would be great danger from fire and from loss by thieves pulling the lint from the sample holes.

Compressing and patching.—All cotton that is exported and a large percentage of the cotton sold to domestic spinners is re-pressed (compressed) before final shipment. The object of this re-pressing is to reduce the size of the bale so that it will occupy less space in cars and vessels. By this compression a bale is reduced to about one-half of its size as it comes from the gin. It is obvious that less canvas is necessary to cover the reduced-size bale than was required for the original. As already stated, however, when cotton leaves the gin there is usually a space on each side of the bale that is not covered. When it is compressed and reduced in size, the canvas already on the bale is sufficient to cover entirely the exposed sides of the smaller bales and nearly sufficient to cover the larger ones.

It is in the process of compressing that the sample holes are covered. Before a bale enters the press the bands put on at the ginnery are removed and pieces of bagging called "patches" are placed over the holes. Other and shorter bands (usually eight in number) are put on in the press and the bale is "tied" with the patches sufficiently secured under the new bands.

While the ostensible purpose of patches is merely to cover sample holes, sometimes more are used than is necessary for this purpose, sometimes less. This appears to be largely due to the difference in the tare rules applying to cotton sold to spinners in this country and to those in Europe. Spinners in the United States buy cotton gross weight, but limit the amount of tare that they will pay for to 24 pounds on a compressed bale. In the principal spinning countries

¹ Many farmers believe that they sell bagging and ties (19 to 24 pounds per bale), for which they pay 3 or 4 cents per pound, at the price of cotton, say 10 to 15 cents per pound, thus making a profit of from \$1 to \$2 per bale on the tare. As shown elsewhere, this is a fallacy. (See p. 30.)

of Europe cotton is sold net, and the rule provides that the net weight in the invoice shall be found by deducting 6 per cent from the gross weight. If it appears that the tare exceeds the amount allowed, the shipper must allow the receiver for the excess, as later explained.

It is thus seen that in patching the bales a shipper must keep in mind, if possible, the rules under which he is going to sell. If the cotton is going to an American mill, it ought not to have tare in excess of 24 pounds per bale, while if it is going to a European mill it often has 6 per cent of its gross weight in tare, because under the contract 6 per cent must be deducted, which for a 500-pound bale is 30 pounds. Thus, the weight of patches put on at the compress is not uniform. A 500-pound bale of cotton when it leaves the gin usually carries less than 5 per cent (less than 25 pounds) of tare. A deduction, therefore, of 6 per cent (or 30 pounds) from this bale would result in the seller giving away more than 1 per cent of his cotton. To avoid this there is put on not only sufficient patches to cover the sample holes, but in the case of cotton that may be exported there is often put on enough more to meet the 6 per cent deduction.¹ It is not always known when cotton is pressed whether it is destined for domestic or foreign consumption, and in cases of this kind the custom is to put on sufficient patches for the export trade. When a shipper sends a lot of cotton to the compress he gives instructions as to exactly how much additional canvas shall be put on.

Since bales of cotton vary in weight, the 6 per cent deduction for canvas and bands will, of course, also vary in actual amount. Thus, it is uncertain how much tare in any given case will meet the 6 per cent deduction. The additional tare ordered put on by the shipper is, therefore, often more than is sufficient to meet the 6 per cent. This excess entails extra cost, extra labor and freight, and also an uncertainty which must be settled by actual weighing which in turn involves further expense and delay.

COTTON BAGGING.

The bagging generally used in this country for covering cotton is a heavy, coarse, loosely woven fabric, made of jute; that used in the other principal cotton-producing countries is a comparatively light, closely woven burlap, also made of jute. There is some cotton in this country covered with burlap and a very little that is covered with cotton canvas, but this altogether constitutes a very small percentage of the crop. Nearly all the bagging used in this country is manufactured in domestic mills, imported bagging constituting only a small percentage of the total.

The standard width of bagging is 44 inches, but it is made in weights varying from 1½ pounds to 2½ pounds or more per linear

¹ For a technical discussion of the means of escaping loss on account of this 6 per cent deduction see pp. 28 to 38.

yard. That most commonly used is supposed to weigh 2 pounds to the yard. There are two grades of American bagging manufactured: One grade is known as union bagging, and is manufactured from old bagging; the other grade is known as York bagging, and is manufactured from new jute stock. Union bagging—that is, that made from old stock—sells for about one-half cent a yard less than that made from new stock. The old stock from which it is made has been exposed to the weather and the fiber has become greatly weakened. It, therefore, has to be twisted rather hard in the mill and, when woven, it is quite open. It is very fragile; so much so, in fact, that sometimes where special care is not used it is cut by the bands in the process of compressing. This quality of bagging requires a great deal of patching.

The American bagging made from new jute stock is of fairly good quality, though it is not as good as that of the same weight imported from Calcutta and other places.

Most of the imported bagging comes from Calcutta and Dundee. That from Dundee is used almost entirely for the wrapping of sea-land cotton and the high-grade staple cotton grown in the Mississippi Delta; it is made from good stock, is closely woven, and makes an excellent cotton covering. The bagging imported from Calcutta compares most nearly with the American product, but is much better. It is made from new jute stock of a quality far superior to that used in the manufacture of American bagging. It, therefore, requires less twisting and makes a much more satisfactory covering.

During the season of 1911 the wholesale price of domestic bagging made from new stock was about 8 cents per yard; that made from old stock was about $7\frac{1}{2}$ cents per yard. Calcutta bagging sold for about $8\frac{1}{2}$ cents, or one-half cent per yard more than American bagging made from new stock. The Calcutta bagging is unquestionably worth a great deal more than that of the same weight made in this country. Since this imported bagging is so superior to the domestic product and sells for only a slightly higher price, it would seem that a much larger quantity would be used. An importer, when asked for an explanation of the small quantity used, stated that one reason is that the output is limited and that foreign mills are afraid to increase their capacity for the purpose of increasing sales in this market because of the uncertainty of the tariff laws of the United States.

The most common explanation for the use of the cheap, inferior bagging is that it is the fault of the owners of public ginneries. The public ginner usually charges so much per bale for ginning, including the bagging and ties. Of course, the cheaper the bagging used the greater the profit from operating a ginnery. Farmers do not seem to realize the importance of using a better covering and seem to prefer the poorer quality of bagging because it is a few cents per bale cheaper.

The use of the poorer quality of American bagging is the means of giving the bagging merchant a very large business in patches. The cheaper and poorer bagging costs about 3 cents to 6 cents a bale less than the better bagging and requires probably twice as great an expense for patches. One of the largest dealers in cotton bagging in the South stated that it was very much to his advantage to sell union bagging, for the reason that it enabled him to sell a much larger quantity of materials for patches. It is obviously poor economy to use a poor grade of covering for cotton at the gin.

The principal supply of the comparatively small quantity of closely woven bagging used on American cotton comes from sugar importers; the bags in which raw sugar is imported, when washed, make an excellent covering for cotton. The supply from this source is limited. Three of these bags are sufficient to cover a bale of cotton. A large percentage of these sugar bags is used in the form of patches. The sugar importers sell them for about 6 cents apiece. After being prepared for cotton covering they sell for from 1½ to 2 cents a yard less than new jute bagging of American manufacture.

AMERICAN COTTON POORLY PROTECTED.

American cotton often reaches the spinner in notoriously bad condition. The covering is badly torn, the bales have a ragged and unsightly appearance, and oftentimes the cotton is scarcely protected at all. The bad condition in which cotton thus reaches the spinner has long been a subject of criticism. This phase of the cotton trade has received a great deal of attention, and much has been written and published in relation thereto. In fact, so much has been said upon this subject that a discussion here would be merely a repetition of well-known facts. It is important, however, to point out that the bad condition in which American cotton reaches the spinner is not due to a scant use of bagging. It is due mainly to the fact that the covering used is either of poor quality or it is carelessly put on, or both. As a matter of fact, less bagging than is now used would be amply sufficient to protect cotton properly if it were put on with intelligent care. An instructive presentation of the unsatisfactory condition in which cotton reaches the spinner is found in House Document No. 577, Sixty-second Congress, second session.

TARE RULES.

The tare rules in the United States are entirely different from those for American cotton in European markets. In the United States cotton is sold gross weight, while in practically all European markets it is sold net weight. Selling at gross weight does not mean that there is no limit to the amount of tare that a bale can carry. The rules fix a maximum, and all tare above this maximum can be deducted and the seller must make allowance to the buyer for it. For

example, if the maximum tare allowance is 24 pounds per bale, the buyer may claim for all weight of tare in excess of 24 pounds.

The tare rules for American cotton in the three principal European markets, Liverpool, Bremen, and Havre, are substantially identical. There is, however, some difference in their results, due to differences in their application, as will appear later.

TARE RULES OF COTTON EXCHANGES AND COTTON MARKETS IN THE UNITED STATES.

The American cotton producer sells his cotton gross weight; that is to say, he receives *nominally* the same price for the tare on his cotton that he does for the cotton itself.¹ There is no uniform rule governing the amount of tare that should be put on cotton at the gin. Custom, however, and the rules in force by exchanges and other organizations have brought about some degree of uniformity in this respect. In most of the spot-cotton markets there are rules or customs prescribing a maximum number of yards of bagging and the maximum number of bands that will be accepted without protest. In general, it may be said that 6 yards of 2-pound bagging and 6 bands weighing $1\frac{1}{2}$ pounds each are the ordinary allowance to the farmer for tare. In a number of markets cotton having more canvas and bands than thus prescribed is penalized either by deduction from the weight or by making a deduction in the price.

Where there are cotton exchanges or organized commercial bodies representing the cotton trade, definite tare rules have usually been established. The rules of the principal cotton exchanges and cotton markets of the country are here summarized.

Tare rules of New Orleans Cotton Exchange.

Under the rules of the New Orleans Cotton Exchange tare is allowed to the extent of 7 bands weighing 1.3 pounds each and canvas to the amount of $3\frac{1}{8}$ per cent of the weight of the bale after deducting the weight of the bands. Any tare in excess of this allowance subjects the seller to a claim. In effect, this rule allows tare to the extent of approximately $26\frac{1}{2}$ pounds per 500-pound bale.

The following example, taken from the rules of the New Orleans Cotton Exchange, illustrates the method of determining whether or not there is excess tare and, if any, how much:

Given 100 bales, weight.....	Pounds. 49, 500
Select 10 bales weighing, say.....	4, 860
Deduct for ties, 70 at 1.3 lbs.....	91
Weight of cotton and bagging.....	4, 769

¹As shown later, this does not mean that the farmer gets the price of cotton for his tare. Instead, the tare is allowed for in the price. (See p. 30.)

10 REPORT OF COMMISSIONER OF CORPORATIONS ON COTTON TARE.

Tare allowed under rule.....	169.90 lbs., or 3 $\frac{1}{8}$ % of 4,769	
Actual tare (bagging) as found by weighing bagging on 10 bales stripped.....	181.53 lbs., or 4.01% of 4,769	
Or.....	.45 excess.	
Weight 100 bales (gross).....		49,500
Less ties.....		910
Weight cotton and bagging.....		48,590

Therefore, the excess tare claim is 0.45 per cent of 48,590 pounds, or 218.66 pounds.

Tare rules of New York Cotton Exchange.

The rules of the New York Cotton Exchange provide that six iron bands or ropes are allowed on a bale of uncompressed cotton and a reasonable number of bands on compressed bales, not to exceed 10 pounds in weight. The rules provide that all unnecessary bagging shall be removed from the bales before they are weighed, or that a fair and equitable deduction shall be made for the same, and that the total tare shall not exceed 28 pounds, including bands and bagging.

Tare rules of other American exchanges and markets.

The rules of the other cotton exchanges of the country vary somewhat. It may be said, however, that generally the rules of spot exchanges allow about 6 yards of 2-pound bagging and six 1 $\frac{1}{2}$ -pound bands, a total of 21 pounds to the bale. Some exchanges allow 23 pounds of bagging and ties, and some as much as 24 pounds. The buyers of Oklahoma have a State Exchange (chartered by the State) and the rules governing tare prescribe one layer of sound jute bagging, tied with flat metallic bands of regulation weight and size. The weight of bagging and ties must not exceed 22 pounds.

In markets where there are no organized exchanges the trade has generally agreed upon tare allowances. The buyers of Texas have organized an association and adopted rules identical with those of the Oklahoma State Exchange, except that they do not prescribe that jute bagging shall be used. The principal buyers of Georgia issued a circular about the beginning of the season of 1911, in which they declared the intention of allowing not more than 6 yards of 2-pound bagging and six ties. Some buyers in Louisiana issued a circular to the same effect, and similar action was taken by several buyers of Meridian, Miss.

The adoption of such rules has in large measure brought about in the domestic trade the use of the amount of canvas and bands prescribed.

In Georgia and South Carolina there are laws forbidding cotton buyers to make any deduction from the weight or in the price on account of tare unless it exceeds 6 per cent of the gross weight of the bale.

In Texas the law requires ginner to stamp or mark the actual amount of tare on each bale, and buyers are forbidden to make a greater deduction for tare, either from the gross weight or in the price, than is shown by the ginner's marks.

It might seem that the effect of the legislation in Georgia and South Carolina would be to induce the farmer always to put on at least 6 per cent of tare. As a matter of fact these laws have not resulted in overtaring cotton to any great extent. In these States the ordinary amount of tare, say from 20 to 24 pounds per bale, is still put on. Whenever there has appeared a disposition to put on more tare than custom allowed, buyers have generally refused to take the cotton at all. They have thus been able to save themselves from the heavy tare which such legislation seems to encourage.

TARE RULES ADOPTED BY AMERICAN COTTON SPINNERS.

In practically all cases cotton is sold to American mills gross weight. Under rules formulated by the Arkwright Club and the New England Cotton Buyers' Association, tare is fixed at 24 pounds per bale; that is to say, as much as 24 pounds of tare nominally will be paid for at the price of cotton. On all excess tare a claim is made, but this claim is reduced to the extent of one-half cent per pound for the value of the excess bagging and ties; that is to say, if there should be 10 pounds of excess tare on a bale and cotton is worth 10 cents a pound, the claim would be \$1, less 5 cents credit for the bagging and ties.

The cotton manufacturers' associations of the Carolinas have a rule that allows 22 pounds per bale on uncompressed cotton, and 24 pounds per bale on compressed cotton. Any excess over this amount of tare constitutes a just claim against the seller. No allowance is made to the shipper for any value for the excess tare.

The tare allowance made by American mills on compressed cotton is greater than that usually put on at the gin. This difference is generally made up by patches put on by the shipper.

TARE RULES OF EUROPEAN MARKETS.

About two-thirds of the American cotton crop is exported and a little more than 80 per cent of such exports go to the United Kingdom, France, and Germany. Thus, these three countries get substantially 50 per cent of the American cotton crop.

The three principal cotton markets of Europe are at Liverpool, Bremen, and Havre. In these markets all cotton is sold net weights. The tare rules governing the sale of American cotton allow 6 per cent

of the gross weight for tare. The rules allow the buyer to claim for any excess and prescribe methods for ascertaining whether or not there is such excess.

C. i. f. and 6 per cent contract.

Cotton exported to the countries under consideration is generally sold under what is known in the trade as "c. i. f. and 6 per cent terms."

The contract commonly used is headed "Cost, Freight, and Insurance Contract Form.—American Cotton. Interior Shipment." The abbreviation "c. i. f." is a combination of the initial letters of the words "Cost, insurance, and freight." The provision in the contract that cotton shall "be invoiced at American actual gross weight less an allowance of 6 per cent," together with the initial letters as just stated, gives rise to the designation "c. i. f. and 6 per cent."

Briefly, the c. i. f. and 6 per cent contract means that the seller guarantees to pay all costs incident to getting the cotton on board ship, to insure it against marine disaster, to pay the freight from the point of shipment to destination, and to allow a deduction of 6 per cent from the actual gross weight to determine the net weight.

There is no important difference in the c. i. f. and 6 per cent contracts of Liverpool, Bremen, and Havre. There are, however, slight differences in their actual effect, due to different methods of applying the rules. These differences will be pointed out as they appear in the discussion. Below are given the pertinent portions of this contract as established by the Liverpool Cotton Association, Ltd.:¹

LIVERPOOL COTTON ASSOCIATION, LIMITED.

COST, FREIGHT AND INSURANCE CONTRACT FORM.—AMERICAN COTTON.—INTERIOR SHIPMENT.

LIVERPOOL, ———.

Messrs. *John Doe & Co., Galveston, Tex.*²

We have this day *bought of you 1,000 Bales Texas* cotton, averaging, per 100 Bales gross, 50,000 lbs. for all descriptions excepting Texas and Arkansas Cotton, which shall average 53,000 lbs. and all other Gulf Cotton, including Alabama and Oklahoma, which shall average 51,000 lbs. per 100 bales gross, (a variation of 5 per cent allowed) Cost, Freight and Insurance, for *Good Middling*.

(a) at *5.90 d.* per lb.,

Or

³(b) at — points — the Seller's price of —.

delivery (Middling American, G. O. C.) in Liverpool at the

¹ The Liverpool rules herein discussed went into effect June 1, 1912. In their practical result they do not materially differ from those formerly in effect.

² All italicised words in the contract were supplied by the Bureau.

³ This (b) is a provision for the sale of cotton on what are known as "calls." These were fully explained in the Report of the Commissioner of Corporations on Cotton Exchanges, Pt. I, pp. 106-108.

time of call. The Cotton to be called in lots of not less than 100 bales on or before ——— but not later than the declaration of marks and ships' names or particulars contained in Through Bill of Lading. Calls to be made on the Single month.

To be invoiced at American actual gross weight, less an allowance of six per cent.¹

(a) Gross landing weight guaranteed to be within one per cent of gross invoice weight.

OR

(b) Net weight (that is, actual weight of bales, less Bands and $3\frac{3}{8}$ per cent allowance for Canvas after deduction for bands), guaranteed by Sellers equal to Net American invoice weight. Settlement to be made with mutual allowances as to weight.

To be shipped during *October* per Rail and / or Steamer from *Gainesville, Texas*, in the Interior of the United States of America to *Galveston* and thence to *Liverpool, England*.

Invoice with full particulars contained in through Bill of Lading to be rendered to the buyer within four weeks of the date of Bill of Lading.

Marine Insurance (which does not cover war risks) shall be provided by the seller with ——— including particular average and country damage and covering 10 per cent in excess of Invoice cost, or in the case of Cotton sold on "Call" 10 per cent in excess of market value up to the "Call" price. Any amount over this shall be for sellers' account in case of total loss only. The cost of stamping documents to be borne by the seller.

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Yours faithfully,

Richard Roe & Co.

Rules governing the c. i. f. and 6 per cent contract.

On the back of the contract are printed the rules relating to cotton sold under it. The tare rules governing the Liverpool contract are as follows:

436. Should the variation in weight on American or East Indian Cotton exceed 5 per cent, then the difference in excess thereof shall be settled for at the market value on the last day of landing of the Cotton contracted for.

435. Gross landing weight shall be ascertained by weighing the Cotton at Port of Discharge on arrival, before sampling (or if already sampled an allowance to be made for the samples drawn).

451. The following additional Clauses apply to C. I. F. Contracts made with the 1 per cent franchise clause:

(a) In determining any loss in weight, allowance shall be made for missing bands.

(b) Should the weight of bands as ascertained at the time of weighing (see Rule 348) exceed 900 lbs. = 408 kilos per each 100 bales then the buyer shall have the right to deduct such excess from the landing weight. The seller is not entitled to any allowance for bands should the weight be less than 900 lbs.

¹ Bold-face type by Bureau.

(c) When the American Invoice weight is not obtainable and in consequence thereof the Invoice weight has to be ascertained at port of arrival, 3 lbs. per bale shall be allowed to the seller for clipping of bands and canvas at time of compressing.

(d) No claim shall be made for variation in weight under Rule 436 for any excess of landing over Invoice weight.

(e) Claims for loss in weight shall be made at the invoice price subject to deduction of 6 per cent tare, minus 1 per cent guarantee clause, equal to 5 per cent on difference in weight.

450. Should the weight of canvas on any lot or mark exceed $3\frac{3}{8}$ per cent of the weight after deduction of actual weight of bands, then the buyer shall have the right to claim for such excess at the invoice price.

473. If on arrival in Liverpool, the actual tare be not ascertained, the buyer shall afterwards be entitled to recover for insufficient allowance, provided the deficiency amounts to $\frac{1}{2}$ -lb. per bale on any entire shipment as defined in Rule 435 (e), but not otherwise. Such claims must be properly substantiated, and be made within two months from last day of landing. If a portion of the Cotton has been tared on arrival, then any claim for overtare made on such portion shall be included in calculating the minimum deficiency of $\frac{1}{2}$ -lb.

It will be noted that the contract provides that the cotton is "to be invoiced at American actual gross weight, less an allowance of 6 per cent," and that under this provision there is an alternative, namely, (a) gross landing weight guaranteed to be within 1 per cent of gross invoice weight; (b) net weight—that is, actual weight of bales less bands and $3\frac{3}{8}$ per cent allowance for canvas—guaranteed by sellers equal to American invoice weight; settlement to be made with mutual allowances as to weight.

Franchise.

The 1 per cent mentioned in the first instance is known in the trade as a "franchise."

This is an allowance for a variation in the landing weight (weight at time of landing) from the invoice weight. The weight of a bale of cotton varies with the conditions under which it is weighed. Cotton is a great absorbent of moisture; therefore, if a bale is weighed after it has been exposed to a dry atmosphere, it will weigh less than after exposure to a damp atmosphere, or vice versa. Experience has shown that variation in weight due to atmospheric conditions should not be more than 1 per cent.

All cotton exported is paid for at its net invoice weight, and to prevent frauds in invoicing the shipper under the first provision of the contract guarantees his gross weights within 1 per cent. That is to say, if a lot of cotton is invoiced at 50,000 pounds gross it is guaranteed to weigh not less than 49,500 pounds when landed. If it loses 500 pounds and weighs only 49,500 pounds, the shipper is paid the full face of his invoice. If it weighs less than 49,500 pounds the

shipper is subject to a claim for the loss in excess of 500 pounds. On the other hand, if it gains 500 pounds or more, and weighs 50,500 pounds or more when landed, the shipper is still paid only the face of his invoice. He is not allowed any credit for any gain in weight, no matter how much it may be.

The practical result of this is that the American shipper in making out his invoice very generally adds 1 per cent to the actual weight.

While the franchise provision gives rise to serious abuse in the trade, it does not directly involve the question of tare and therefore need not be discussed at length.

Mutual allowances.

In the second instance the weight is not only guaranteed, but any gain over the invoice weight is credited to the seller and any loss in weight is reimbursed to buyer. That is the meaning of "mutual allowances." (This must not be confused with "friendly allowances;" see p. 23.)

In the application of the mutual-allowance provision sometimes the 1 per cent franchise is taken into account and sometimes it is not. Whether it is or not depends upon the nature of the contract. The contract may provide for a franchise of 1 per cent and mutual allowances, or it may provide merely for mutual allowances on the actual weights.¹

Draft.

In Liverpool there is an arbitrary allowance of 2 pounds per bale for cotton sold on Liverpool spot terms. This is called "draft." Under Havre spot terms the allowance is "one-half per cent for draft and one-half per cent for overdraft," which is equivalent to 5 pounds per standard bale. No allowance for draft is mentioned in the Bremen rules.

There does not seem to be any certain knowledge as to the reason underlying this allowance. One theory is that in the weighing of cotton in the open air the force of the wind may have some effect upon

¹ When a sale is made under the provision of a 1 per cent franchise guarantee and on "mutual allowances for weight," the calculations determining the allowance are illustrated by the following:

Gross invoice weight, say.....	50,000 lbs.	50,000 lbs.
1 per cent franchise.....	500 lbs.	500 lbs.
	49,500 lbs.	49,500 lbs.
If the gross landing weight should be ascertained in Bremen with.....	49,700 lbs. if	49,200 lbs.
Overweight.....	200 lbs.	
Underweight.....		300 lbs.
Less 6 per cent for tare on the difference.....	12 lbs.	18 lbs.
	Net 188 lbs.	Net 282 lbs.
	to the credit of the shipper.	to the debit of the shipper.

the weight and that the allowance is made for that reason. Another theory is that the canvas used on cotton collects a large amount of foreign matter and that the allowance is made to cover it. Still another theory is that the allowance is based on the fact that many years ago the scales used for weighing cotton had no subdivision less than a pound, and, in fact, some of them had no subdivision less than 2 pounds. Because of this there was always the liability of error in weight to the extent of at least 1 pound. Even under the present custom of weighing cotton fractions of a pound are not taken into account.

The 6 per cent deduction in a c. i. f. contract is unquestionably intended to cover not only the tare but also an allowance for draft. In making an actual test of tare, however, in Liverpool and Havre no account is taken of draft, because the computations are based upon the actual landing weights. This is explained later.

Comparison of tare rules in Liverpool, Bremen, and Havre.

In Bremen and Havre, as well as in Liverpool, the 6 per cent allowance is intended to cover the weight of canvas and bands, including the draft. The rules fixing the right to claim for overtare in all these markets are printed on the back of the contract. For convenience of comparison these rules in the three markets under consideration are given below:

LIVERPOOL.	HAVRE.	BREMEN.
Should the weight of bands as ascertained at the time of weighing (see Rule 348) exceed 900 pounds (408 kilos) per each 100 bales, then the buyer shall have the right to deduct such excess from the landing weight. The seller is not entitled to any allowance for bands should the weight be less than 900 pounds.	Should the weight of bands exceed 408 kilos (900 pounds) per 100 bales and/or should the weight of the packing canvas exceed $3\frac{1}{2}$ per cent according to usual calculations the buyer to have the right to claim excess at invoice price.	When cotton is sold with 6 per cent allowance the weight per 100 bales of the iron bands shall on an average not exceed 408 kilos (900 pounds) and of the canvas $3\frac{1}{2}$ per cent upon the whole lot. The $3\frac{1}{2}$ per cent shall be calculated upon the invoice weight less the franchise and the weights of bands as ascertained here. Any excess of tare (iron bands and canvas) to be deducted from the gross landing weight.
Should the weight of canvas on any lot or mark exceed $3\frac{1}{2}$ per cent of the weight after deduction of actual weight of bands then the buyer shall have the right to claim for such excess at the invoice price.	Two bales at least shall be completely stripped, and at the most 5 per cent of the number of bales taken as they come and bands and canvas to be weighed separately.	

It will be observed from the excerpts above that the rules on the back of the Liverpool and Bremen contracts do not specify the num-

ber of bales to be tested. In these markets the spot rule governs. The Liverpool rule is as follows:

The actual tare (exclusive of draft) shall be ascertained as follows: When the lot numbers 50, or less, 5 bales; when more than 50, up to 70, inclusive, 7 bales; and more than 70, 10 bales; or more or less, as may be agreed upon, shall be taken indiscriminately, stripped of their canvas, and tared as follows: For American cotton the tare shall be ascertained by weighing the canvas separately, and also collectively; but the allowance for canvas made on the invoice shall in no case exceed the rate as ascertained by the latter mode. The allowance shall be calculated at the exact relative proportion of the weight of the bales stripped to the total weight of the whole lot. The allowance for canvas must be calculated on the weight of the bales after the weight of the bands has been deducted, and before the allowance for draft has been deducted.

The Bremen rule is substantially the same as that in Liverpool.

That portion of the Havre rules indicating the number of bales that shall be stripped is not now in force. The usual custom in that market now is to strip 10 per cent of the bales; in other words, the Liverpool rule is applied. In both Havre and Bremen, however, the *average* weight of tare found on the bales stripped is applied to the entire lot upon the assumption that all bales carry the same amount of tare; in Liverpool the tare on the entire lot is calculated at the *exact relative proportion* of the tare on the bales stripped upon the assumption that the tare on each bale is in proportion to its weight.

It will be observed from the excerpts from the rules above given that the stipulated weight of bands allowed in the three markets is identical, and that the percentage that the canvas shall be of the gross weight, less bands, is likewise the same.

PURPOSE AND EFFECT OF "C. I. F. AND 6 PER CENT" CONTRACT.

From the foregoing it is evident that the purpose of the c. i. f. and 6 per cent contract is to provide for the sale of cotton on net weights. It should be observed that the rules first provide that 6 per cent shall be deducted from the gross weight in order to determine the weight to be paid for and, secondly, they provide methods of determining what is the actual tare that shall be deducted in case there is more tare than the rules allow. The theory of the contract, therefore, is that a straight deduction of 6 per cent will practically give the net weight of the cotton, and thus as a rule make unnecessary the physical determination of tare. In actual practice, however, this has not been the case. Instead, a great quantity of American cotton shipped to Europe is subjected to actual physical test for tare.

When cotton is accepted by the receiver without protest as to tare, settlement is made on the net weight found by deducting 6 per cent from the gross invoice weight, and this applies in all markets.

Method of ascertaining actual tare.

If the receiver of cotton has reason to believe that it is overtared, the rules in all three markets provide a method by which the actual tare shall be ascertained by physical test, and thus fix the basis for a claim for overtare. Whenever this actual test is made, the 6 per cent rule in the c. i. f. contract is in effect set aside, and a different tare maximum is enforced. In the case of an actual test for tare, the rules allow 9 pounds per bale for bands, and provide that the canvas shall not exceed $3\frac{1}{8}$ per cent of the gross weight after deducting bands. A calculation thus made on a 500-pound bale of cotton allows 9 pounds for bands and $17\frac{1}{2}$ pounds for canvas, or $26\frac{1}{2}$ pounds altogether for tare. A 6 per cent deduction would allow 30 pounds. (See p. 28.)

To ascertain the weight of the ties, or bands, 10 bands, or sometimes 20, are taken from the bales and weighed. Then all the bands on the entire lot are counted and their total weight is determined on the basis of the weight of the bands weighed. Since the bands are of a practically uniform standard, their total weight thus obtained can be accepted, for all practical purposes, as actual. The weight of canvas (bagging) is determined by stripping 10 per cent of the bales in a lot and weighing the canvas stripped off. The so-called actual weight of the canvas on the entire lot is found by applying the weight of the canvas from the stripped bales. The nominal allowances for bands and canvas are the same in all three markets, but practically in determining actual tare by test the actual allowances differ. This is due to differences in the application of the rule. At foreign ports cotton is weighed upon landing. In Liverpool and Havre the actual weight of the bands is deducted from this gross landing weight. In Bremen the computation is made on the invoice weight and not upon the landing weight.

There are shown below statements of tare as computed in the Liverpool, Havre, and Bremen markets as a result of actual tests:

STATEMENT OF TARE—LIVERPOOL.

[On 100 bales cotton ex. steamship <i>Ozonian</i> (from New Orleans).]		Pounds.
10 bales, gross landing weight.....		5, 303
72 bands.....		81
Gross weight, less bands.....		5, 222
Actual weight of tare (canvas) on 10 bales.....		230
100 bales, gross landing weight.....		50, 769
711 bands.....		799
Gross weight, less bands.....		49, 970
Tare (canvas) allowed, $3\frac{1}{8}$ per cent of 49,970 pounds.....		1, 780
If on 5,222 pounds tare is 230 pounds, then on 49,970 pounds tare is.....		2, 200
Overtare is.....		420

REPORT OF COMMISSIONER OF CORPORATIONS ON COTTON TARE. 19

STATEMENT OF TARE—HAVRE.

[100 bales cotton.]

	Kilos.
Landing weight.....	23, 207. 5
Bands.....	399. 5
	<hr/> 22, 808. 0
Tare allowed, at $3\frac{1}{8}$ per cent of 22,808 kilos.....	812. 5
Actual tare 5 bales, 38 kilos; 100 bales.....	760. 0
Undertare (116 pounds).....	52. 5

STATEMENT OF TARE—BREMEN.

[On 50 bales cotton ex. steamship — (from Savannah).]

5 bales, invoice weight.....	kilos..	1, 073. 5	
Actual bagging on 5 bales.....	do....	43. 5	
Bagging on 50 bales.....	kilos..		435. 0
50 bales, gross invoice weight.....	pounds..	26, 451. 0	
Less 1 per cent franchise.....	do....	265. 0	
		<hr/> 26, 186. 0	
26,186 pounds, at 45.35 kilos per 100 pounds.....	kilos..	11, 875. 5	
Less 401 bands.....	do....	200. 5	
		<hr/> 11, 675. 0	
Tare (canvas) allowed, $3\frac{1}{8}$ per cent of 11,675 kilos.....	kilos..		416. 0
Excess tare.....	do....		19. 0
Less underweight of bands.....	do....		3. 5
Net excess tare (34 pounds).....	do....		15. 5

The differences in the application of the rules in computing actual tare in the three markets are more clearly shown by the following comparative statement, where three lots of cotton are taken, all assumed to be the same gross weight:

PRO FORMA COMPARISON OF COMPUTATIONS, BREMEN, HAVRE, AND LIVERPOOL.

[100 bales.]

BREMEN.

	Pounds.
Invoice weight.....	52, 725
Less 1 per cent franchise.....	527
	<hr/> 52, 198
Less 800 bands.....	883
	<hr/> 51, 315
Tare allowed, $3\frac{1}{8}$ per cent of 51,315 pounds.....	1, 828
Actual tare on 10 bales, 200.7 pounds; 100 bales.....	2, 007
Excess of tare.....	179
Underweight of bands (900 pounds allowed).....	17
Net excess tare.....	<hr/> 162

HAVRE.		Pounds.
Landing weight in Havre.....		52, 100
800 bands.....		883
		<u>51, 217</u>
Tare allowed, $3\frac{1}{8}$ per cent of 51,217 pounds.....		1, 824
Actual tare on 10 bales, 200.7 pounds; 100 bales.....		2, 007
		<u>183</u>
LIVERPOOL.		Pounds.
Landing weight.....		52, 100
800 bands.....		883
		<u>51, 217</u>
Tare allowed, $3\frac{1}{8}$ per cent of 51,217 pounds.....		1, 824
	Pounds.	
Actual tare on 10 bales.....	200. 7	
Weight of 10 bales less bands.....	5, 162. 0	
Tare on entire lot, $\left\{ \begin{array}{l} 200.7 \\ 5,162 \end{array} \right\} \times 51, 217$		1, 984
		<u>160</u>

In the foregoing comparison it is assumed that each lot of cotton weighed at the American port 52,198 pounds; that 527 pounds (about 1 per cent), according to the custom of the trade, were added by the shipper for franchise in making out his invoice; that the gross weight invoiced, therefore, was 52,725 pounds; and that the net invoice weight for which the shipper drew his draft was 6 per cent less than 52,725 pounds, or 49,562 pounds. The weight of bands and the percentage allowed for canvas are the same in all three markets, but the results are not the same in any two of them. The excess tare is found to be 162 pounds in Bremen, 183 pounds in Havre, and 160 pounds in Liverpool.

These differences in results are due to differences in the methods of calculation. As just stated, in Bremen the basis for the calculation is the invoice weight, while in Havre and Liverpool the basis is the landing weight. The gross landing weight was 52,100 pounds, or 625 pounds less than the gross invoice weight and indicating an actual shrinkage of 98 pounds. In Bremen, where the calculation is based on the gross invoice weight, there is deducted 1 per cent (527 pounds) for franchise. Since the gross weight which the shipper is bound to deliver under the contract is 1 per cent less than the invoice weight, it is perfectly proper in computing tare on the *invoice* weight to deduct franchise. The reason for not making a deduction for franchise in Havre and Liverpool is that in those markets tare is computed on the *landing* weight and not on the *invoice* weight, as in the case of Bremen. It would be

manifestly improper to deduct an allowance for franchise from the *landing* weight, because the actual weighing eliminates any error in weight. The gross weights, therefore, from which the weight of bands was deducted would be 52,198 pounds in Bremen and 52,100 pounds in Havre and Liverpool.

The first step in the calculation is to ascertain the weight of the bands on the entire lot. This is taken at 883 pounds in each market. The weight of bands is deducted from the gross weight, which leaves the weight upon which is computed the weight of canvas that the rules allow. In Bremen this is 51,315 pounds, and in both Havre and Liverpool 51,217 pounds. The canvas allowed under the rules is $3\frac{1}{8}$ per cent of these weights, or 1,828 pounds in Bremen and 1,824 pounds in Havre and Liverpool.

After determining the amount of canvas that ought to be on the cotton the next step is to determine the amount that actually is on it. This is done by taking 10 bales from the lot, stripping the canvas from these bales, and weighing it. The result of this test is taken at 200.7 pounds of canvas on the 10 bales in each market, or an average of 20.07 pounds per bale. In Bremen and Havre the amount of canvas on the entire number of bales is found by applying to the lot the average on the 10 bales stripped. Thus the "actual" canvas in Bremen and that in Havre are the same, namely, 2,007 pounds. In Havre the difference between the tare that "ought to be," namely, 1,824 pounds, and the actual tare found in the manner above described, namely, 2,007 pounds, is the excess, or 183 pounds. In Bremen the difference between the actual weight of the canvas and the weight allowed was 179 pounds.

In Liverpool the actual deduction for canvas is found in a slightly different way. In that market it is assumed that the ratio of canvas to gross weight is the same on all bales, and therefore the proportion of the actual tare on the 10 bales stripped to the total weight of these bales is applied to the *weight* of the entire lot in order to determine the total actual tare. This, it will be seen, gives the "actual" weight of the canvas as 1,984 pounds. Since the amount allowable under the $3\frac{1}{8}$ per cent rule would be 1,824 pounds, the excess tare in this case is 160 pounds.

In the case of the Havre and Liverpool markets the excess tare thus arrived at is the final amount. In Bremen, however, the shipper is entitled to credit for any underweight of bands. In this particular illustration it has been assumed that there was an underweight of bands amounting to 17 pounds. This would be set against the excess tare on account of canvas, 179 pounds, reducing the excess tare in the Bremen market to 162 pounds.

In Liverpool and Havre no allowance is made for underweight of bands. By reference to page 13 it will be seen that a clause in para-

graph 451 of the rules printed on the back of the c. i. f. and 6 per cent contract (item a) provides:

The following additional Clauses apply to C. I. F. Contracts made with the 1 per cent franchise clause:

(a) In determining any loss in weight allowance shall be made for missing bands.

This rule, however, applies only when a claim is made for loss in weight. When cotton is sold under Liverpool c. i. f. contract the rules specifically provide that the seller is not entitled to any allowance for bands if the weight is less than 900 pounds for 800 bands.

The chief points of difference in the application of the rules in the three markets are, first, that in Bremen the shipper is allowed credit for underweight of bands, and second, that in Liverpool the ratio of the weight of the canvas from the bales stripped to the weight of these bales is applied to the *weight* of the entire lot, whereas in Bremen and Havre the average weight of the canvas from the bales is applied to the *number of bales* in the entire lot; that is, in Bremen and Havre it is assumed that the actual amount of canvas is the same on all the bales regardless of their gross weight, while in Liverpool it is assumed that the ratio of canvas to gross weight is the same for all bales.

In the comparison immediately foregoing these different assumptions give the smallest tare in Liverpool. This is because the assumed average weight of the bales stripped was more than the average weight of the entire lot. The average weight of the bales stripped was 516 pounds, whereas the average weight for the entire lot was only 512 pounds. If the average weight of the bales stripped had been less than the average for the lot, the claim in Liverpool would have been proportionately larger; or, if the average weight of the 10 bales stripped had been exactly the average for the lot, then the Liverpool result would have been exactly the same as Havre.

Inaccuracy of tare tests.

There is evident liability to more or less error in the methods of determining tare as above described. If the canvas on the bales tested is a true average for the lot, the weight thus found must be correct. If, however, these tested bales are not a true average for the lot, there must be error. It is well known that there is great variation in the weight of the bales in a lot and also in the weight of the canvas on different bales in the same lot of cotton. There is, therefore, always the possibility, if not the probability, that 10 per cent of the bales in a lot will not truly represent the entire lot. It may be that a merchant selling or a spinner buying a great many lots of cotton during the year will not suffer, because in making a large number of tests the

errors of undertare will balance those of overtare. Of course, buyers and sellers of single lots, or of only a few lots, are liable to suffer.

"Friendly allowances."

All allowances for excess tare are not determined by actual tests. Considerable quantities of cotton, particularly in the early part of the season, pass to the buyer under a custom of "friendly allowances"; that is, estimated allowances mutually satisfactory. At times when stocks are low and spinners are desirous of obtaining cotton as quickly as possible, the right to demand an actual test of the tare is often waived in order to avoid delay. In such a case the spinner proposes that if a certain allowance is made to him he will not require the actual testing of tare. He prefers to accept an estimated allowance rather than to be delayed in receiving his cotton. The representative of the American shipper, on the other hand, is perfectly willing to make the test, as loss of time signifies nothing to him. As a result of the spinner's anxiety to receive his cotton quickly and the readiness of the merchant at all times to make the test it is apparent that the merchant's representative is in a position to take advantage of the spinner's necessities. The result is that in most cases the deduction proposed to the spinner is less than the actual overtare, and to this extent the spinner suffers and the American shipper profits.

There is still another portion of cotton that is neither actually tested for tare nor upon which any friendly allowance is made. If the overtare is apparently light and the spinner is in a hurry to receive the cotton, he sometimes takes it without any tare allowance whatever.

In this connection a representative of American shippers whose house controls a large quantity of cotton stated:

Under the friendly allowance arrangement, and under the passing of cotton without any tare allowance at all, American shippers every year receive large sums of money for excess tare.

From the above facts it is evident that notwithstanding the fact that the rules governing a c. i. f. and 6 per cent contract contemplate the selling of cotton on net weights, unquestionably a considerable percentage of the cotton exported from America is paid for on weights that are probably somewhat in excess of the net amount of the cotton.

OVERTARE.

Perhaps the most important result of the 6 per cent tare rule is that the American shipper very generally overtare his cotton.

There are two phases of overtare. In one sense it is the use of more tare than is necessary to protect the cotton from damage. In

the other sense it is using more tare than is allowed under prescribed rules. In speaking of overtare the trade always has in mind this latter phase.

Reason for overtare.

The reason generally given for overtare is that, since the American shipper knows that at least 6 per cent will be deducted in his invoice for tare, he ordinarily aims to have at least that amount of tare on the cotton which he sends abroad.

Long ago when the bales were much lighter than now, the canvas and bands necessary properly to protect them amounted to about 6 per cent of the gross weight. The first cotton crop of the United States that amounted to as much as 1,000,000 bales was grown in 1826, and the average net weight of the bales for that year is given, according to the most reliable sources of information, as only about 330 pounds. The average weight did not reach as much as 400 pounds until 1842 and did not reach as much as 450 pounds until 1859. The average net weight generally ranged below 450 pounds per bale as late as 1880. At the present time the average is some 480 pounds net, or slightly more than 500 pounds gross.

A bale of cotton weighing 400 pounds gross would carry from 20 to 25 pounds of tare, so that formerly a deduction of 6 per cent somewhere nearly represented the actual tare and "draft." As the weight of the bale increased the weight of the necessary tare did not increase in proportion, so that a deduction of 6 per cent from a bale weighing 500 pounds exceeded the actual amount of tare.

The rule of the trade which allows a deduction of 6 per cent was therefore originally established in reason. At the present time, however, there is no excuse for the application of this rule. If there had been sufficient flexibility in the rules of the trade to meet the varying conditions as they have arisen, there probably would have been less controversy over the question of tare.

One of the best-informed men in the European cotton trade, in discussing this subject, stated, in substance:

There are two reasons why American shippers place more canvas upon cotton than is necessary to protect it. The custom originally grew out of the fact that under the old rules (which are still in existence) the foreign receiver of cotton deducted 6 per cent of the gross weight of the bales for tare. In the early days of the industry the bales were much lighter than at present, and the allowance of 6 per cent was found from experience to be practically proper. As the weight of the bale increased the percentage of wrapping did not increase in proportion. This made a 6 per cent deduction too much. The foreign buyer, in selling cotton to the spinner, began to put additional packing upon the cotton in sufficient quantity to make up for the 6 per

cent allowance. The American shipper eventually discovered what the foreign merchant was doing, and he began to place this extra canvas upon the bales himself. This was the reason for the beginning of this practice, and the shipper and the merchant were entirely justified in doing what they did. It was not always possible to determine exactly how much additional canvas should be put on the bales to make up the 6 per cent allowance, and the shipper, in order to be sure that he did not give away his cotton, put on more than the rules allowed, reasoning that it was better to have a claim and pay it than to give his cotton away. Furthermore, it has always been well known in the trade that considerable cotton will go to the spinner under one circumstance or another without any test for tare, and in such cases all overtare less actual money paid for canvas is a net profit to the shipper.

The manager of one of the largest firms of cotton merchants in Liverpool briefly gave the reasons for the 6 per cent deduction and for overtare, as follows:

In the early days of the cotton trade, when the commodity was packed in comparatively light bales weighing from 400 to 450 pounds, the canvas and bands, plus 2 pounds for draft and overdraft, amounted to about 6 per cent of the gross weight of the bale. This led to the adoption of the rule which allows 6 per cent for tare and draft on American cotton. As the bales began to increase in size the weight of the canvas did not increase in proportion. Furthermore, a somewhat lighter weight of canvas has been used in later years than formerly. This had the effect of relatively reducing the actual tare with the result that a bale of cotton from which had been deducted 6 per cent was actually sold for fewer pounds than were in the bale. This difference between the actual tare and the tare allowance was a distinct gain to the spinner. It was practically a gift to him of that much cotton. Under the contract for spot cotton the Liverpool merchant allowed the spinner 9 pounds for ties and $3\frac{1}{8}$ per cent for canvas; if there were less than $3\frac{1}{8}$ per cent of canvas the merchant was giving away so much cotton. Therefore, in order to protect himself he would put on enough canvas to make the $3\frac{1}{8}$ per cent, and this prevented the spinner from obtaining something for nothing. The American shipper, up to that time, did not seem to realize that he was being victimized to the extent of 2, 3, or 4 pounds of cotton on each bale exported. He soon, however, "caught on" and began to put on the extra canvas himself. Out of this has grown the custom as it exists to-day. The American shipper, in order not to give away his cotton, puts on sufficient canvas to make the total tare equal 6 per cent of the gross weight of the bales, and that he may be absolutely sure that he has added enough he almost invariably adds more than is necessary to make up the 6 per cent. He understands, of course, that any excess over 6 per cent will subject him to a claim, but he reasons that it is better to pay a claim than to give away his cotton. Furthermore, there are many

lots of cotton that are overtared and not actually tested; that is to say, the receiver (the spinner) protests that there is more than 6 per cent tare on the cotton, but being in a hurry to get it to his mill, he and the shipper make mutual concessions and the excess tare is estimated. If this estimate is too low, the shipper profits; if it is too high, the spinner profits.

The reasons for overtare, as indicated in the above excerpts, are not universally admitted. Some exporters and others in the cotton trade assert that notwithstanding the discrepancy between the amount of tare provided for on the face of the contract and the amount actually allowed when the tests are made this does not compel the exporter to add tare sufficient to make the total equal to 6 per cent (roughly, 30 pounds). Instead, they assert that this discrepancy of $3\frac{1}{2}$ pounds can be and usually is taken care of by the exporter in arriving at his selling price to the foreign buyer. In other words, they argue that the American shipper can protect himself, and does protect himself, in the price that he receives for his cotton, and that it is not necessary, therefore, for him to undertake to protect himself by adding more tare than the rules actually allow.

The effect of this discrepancy between the contract and the rules, as it relates to the exporter, is discussed on page 28.

Proportion of American cotton exports which are overtared.

Overtare, in this connection, is used in the sense that the tare exceeds 9 pounds per bale for bands and $3\frac{1}{8}$ per cent of the remaining weight for canvas.

There are no statistics covering the amount of overtared cotton reaching European ports. However, men who have been in the trade for a great number of years and who have handled large quantities of cotton have had opportunity to arrive at fairly accurate conclusions as to the proportion of the cotton handled by them that carries more tare than the rules allow.

The consensus of opinion, as expressed by European merchants and others, is that a very large proportion of American cotton reaching foreign markets is overtared. One of the best-informed merchants in Liverpool, whose firm handles many thousands of bales of cotton every year in various European markets, stated that probably 50 per cent of American cotton reaching European ports is overtared. This estimate seems to be a conservative one, as viewed generally by Liverpool merchants. The manager of a firm of cotton "controllers"¹ handling large quantities of cotton estimated that

¹ American shippers usually employ some individual or firm to represent them in the delivery of cotton to European buyers. Such representative is called a "controller." It is his business to look after the interests of the shipper, and he acts for the latter in all controversies over tare, weight, damage, etc.

40 per cent of the cotton shipped to Europe from Texas ports, and from 60 to 75 per cent of that shipped from other American ports, is overtared. Taking into account the relative proportions of cotton exported from Texas ports and other American ports, there is very little difference in this estimate from that made by the Liverpool merchant just referred to.

In this connection there arises the question as to what proportion of American cotton exported reaches foreign ports with less than the amount of tare allowed by the rules. The best judgment of those in the foreign trade is that at least 50 per cent of the cotton exported from America is overtared and that an insignificant portion of the remaining 50 per cent is undertared. In other words, the opinion of the most conservative and best-informed individuals interested in the cotton trade appears to be that about half of the cotton received at European ports is overtared and that the other half carries about the amount of tare that is allowed by the rules.

Extent to which the tare on overtared cotton exceeds the amount allowed under the rules.

The excess of tare on American cotton is usually found in the canvas. It does not often occur that the weight of the bands exceeds the limitation of 9 pounds per bale. This is readily understood when it is recalled that the rules do not permit more than 8 bands upon a bale and that the weight of bands is practically uniform. It is, of course, an easy matter to count them and to remove any excess in number.

The Bureau collected some representative statistics showing the excess of canvas on a number of lots of cotton where tests had been made for tare. From these figures it is found that in testing 20,350 bales of cotton, representing 240 lots shipped from ports outside of Texas, the excess weight of canvas was 48,742 pounds, being an average excess of 2.4 pounds per bale. Tests of 38 other lots, representing 2,900 bales shipped from Texas ports, averaged $1\frac{1}{2}$ pounds of excess canvas to the bale. It is of particular interest to note that cotton reaching Europe from Texas ports is less heavily tared than that from other American ports. European merchants and spinners say that up to three or four years ago practically no cotton from Texas was overtared. Since that time shipments from Texas have carried a considerable excess of tare, but not to the extent of that coming from other ports.

In addition to these figures for actual tests, statistics were secured covering 40,879 bales of cotton upon which there had been made "friendly allowances" for tare. (See p. 23.) These statistics indicate an average excess of 1.8 pounds of canvas allowed on each bale. In view of what was said on page 23, there is no question that the actual excess was higher than this average.

EFFECT OF THE C. I. F. AND 6 PER CENT CONTRACT ON THE AMERICAN EXPORTER.

On the face of the c. i. f. and 6 per cent contract it is stipulated that the cotton is "*to be invoiced at American actual gross weight, less an allowance of 6 per cent.*"

Since the net weight is found by deducting 6 per cent from the gross weight, the exporter must have sufficient tare on his cotton to equalize the 6 per cent deduction, or protect himself in some other way.

If in the final settlement of the transaction shippers were allowed the 6 per cent deducted in the invoice, they could not be adversely affected on account of the deduction in the foreign market. In actual practice, however, as already shown, tests made under the rules practically set aside the 6 per cent allowance and substitute an allowance of 9 pounds for bands and $3\frac{3}{4}$ per cent of the remainder of the weight for canvas, which, on a standard bale, is equivalent to 5.3 per cent.

This places the exporter at a disadvantage. To illustrate: Suppose an exporter puts exactly 30 pounds of tare, or 6 per cent, on a bale; the receiver demands a test and finds exactly 30 pounds of tare; but the rules allow, roughly, only $26\frac{1}{2}$ pounds, and permit the receiver to make a claim on the shipper for the excess, which is $3\frac{1}{2}$ pounds. Thus, notwithstanding that the shipper is compelled by his contract to deduct 30 pounds, in the case of a test he is allowed only $26\frac{1}{2}$ pounds. If he tries to escape claim for tare by putting on only $26\frac{1}{2}$ pounds and at the same time deducts 30 pounds on the face of his invoice to comply with his contract, and does not otherwise protect himself, he gives away $3\frac{1}{2}$ pounds of cotton. Or if he takes the other horn of the dilemma and puts on 30 pounds he has to pay a claim for $3\frac{1}{2}$ pounds, which amounts to the same thing.

It is obvious that exporters can not continue to do business profitably under such rules unless they can find some way of escaping from loss resulting from their strict application. The question is, How does a cotton exporter, under such circumstances, save himself? The usual way by which such loss on account of lack of harmony between the requirements on the face of the contract and the rules governing it is avoided seems to be for the shipper to take account of the value of this discrepancy of $3\frac{1}{2}$ pounds in the price that he charges the foreign buyer. Relative to this matter, a member of a large exporting firm said:

After the bale is prepared for final shipment it is sold upon the conditions nominated by the European buyer. These conditions vary in Liverpool, Bremen, Havre, and Trieste. The American exporting houses selling cotton take these conditions into account in figuring their price.

* * * * *

While a large proportion of cotton exported is sold on c. i. f. and 6 per cent terms, at the same time Liverpool and Bremen arbitration allowance is 5.3 per cent for tare, and claims are made on this basis, although 6 per cent is deducted from invoice, but any firms having knowledge of the export business know claims are made on this basis and have taken it into consideration.

One of the best informed cotton men of this country, in discussing this phase of the c. i. f. and 6 per cent contract, said:

The general statement of the principle governing tare allowances is that the rules of the market in which the cotton is sold and the terms of the contract recognized thereby are considered in figuring the price at which cotton is sold to such market. If the said rules and terms are more onerous to the seller, the price asked is correspondingly higher; if more liberal, the price asked is proportionately lower.

* * * * *

It is quite true that a shipper on a c. i. f. and 6 per cent contract deducts 6 per cent, or, say, 30 pounds, from his invoice weights; and it is true that if the bagging and ties on the bale exceed in weight the tare allowance of the Liverpool rules, say, 26½ pounds per bale, he is billed for such excess in addition; but it is also true that he knows these facts, and if, in spite of such knowledge, he deliberately adds unnecessary bagging to bring the weight up to 30 pounds he is simply taking the chance of making a profit not contemplated in the contract, or the rules, or figured in his selling price, but based upon the possibility that the cotton may not be strictly tared according to rules and he may in consequence realize this additional profit.

Of course, if cotton has on it 6 per cent tare and no claim is made, the shipper does not lose, and if he has made no adjustment in his price, he does not gain; if it has on more than 6 per cent and no claim is made, he gains to the extent of the excess. Again, if the shipper has on 30 pounds of tare and also takes account of the 3½ pounds in the price and no claim is made, he gains the value of 3½ pounds of cotton.

While it is undoubtedly true that some shippers deliberately add unnecessary bagging for the express purpose of making a profit, it appears that many of those who add excess tare do so in the belief that such a course is necessary in order to protect themselves against loss. This latter fact is well established by the testimony of numerous shippers interviewed during the course of this investigation.

There is sometimes a possibility of the exporter saving himself from loss in another way. Under the contract the shipper usually guarantees that the landing weight shall be within 1 per cent of the gross invoice weight. This, as previously explained under the discussion of franchise (see p. 14), gives a margin of 5 pounds on a standard bale. If cotton is in a very dry condition when shipped, this addition to the weight is sufficient to save the shipper against a

part, if not all, of his loss on account of the tare discrepancy. If, on the other hand, the cotton is shipped in a damp condition, it may lose in weight, and the shipper can not thus save himself. It is seen, therefore, that the exporter can not rely upon his franchise to save him from the loss resulting from the discrepancy between the 6 per cent deduction and the 5.3 per cent allowance. His only sure and certain remedy is to take account of the discrepancy in his selling price.

EFFECT OF TARE ALLOWANCES ON THE PRICE PAID THE PRODUCER.

There are two main questions as to the effect of tare allowances on the price of cotton: (1) Does the producer gain; does he really sell his tare, or any part of it, at the price of cotton; (2) is the producer injured because of the deduction of an undue amount of tare, especially under the c. i. f. and 6 per cent contract?

FALLACY OF ARGUMENT THAT PRODUCER BENEFITS FROM THE TARE ON HIS COTTON.

Some farmers believe that in selling their cotton gross weight they receive the price of cotton for the bagging and ties, which are worth much less per pound than the cotton, and that therefore they profit to the extent of the difference between the price which they pay for the bagging and ties and the price which they receive for them as sold gross weight. Similarly, some American spinners insist that because they buy cotton gross weight they are paying the same price for bagging and ties that they do for cotton.

It would seem hardly necessary to combat the idea that the producer of cotton can, as a rule, obtain the price of cotton for the tare, but in view of the undoubted fact that this belief exists to a greater or less extent, the following representative excerpts from a large number of statements obtained by the Bureau are presented as establishing beyond question the fact that the tare on a bale of cotton is taken into account in determining the price, though not always accurately, and that, as a rule, the farmer does not receive the price of cotton for the tare, nor does the manufacturer pay the price of cotton for tare.

A prominent cotton merchant of Liverpool said:

The planter has a notion that he makes money from bagging, but as a matter of fact he does not. The planter believes he is buying bagging at 4, 5, or 6 cents per pound and selling at 10, 12, or 15 cents. Unquestionably he does no such thing. The cotton buyer most surely makes allowance for tare in the price he pays.

A representative of one of the largest cotton firms in Liverpool said:

These elements are all more or less a matter of calculation, and are taken into account in determining prices.

A member of one of the largest cotton firms in Bremen stated:

Tare and all other allowances are taken into account when the price is determined at every point where cotton changes ownership from the producer to the spinner.

A cotton factor in New Orleans said:

Allowance for tare would be made in the price calculation regardless of whether such allowance was the subject of express stipulation or indirect reservation. In so far as the price paid for the gross package is concerned the result in either case is the same. If the buyer should be required to pay for the gross weight of the bale without any deduction for bagging and ties, his calculations if analyzed would show that he would pay less per pound for the gross weight of the bale than he would pay if his figures were based upon the weight of the net cotton in the bale; but if he paid less per pound in the first case he would be paying for more pounds, and if he paid more per pound in the latter case it would be found that he was paying such increased price on less weight, with the result that both differentials would be equalized in the final summing up or in the amount of money paid for the bale as it stood.

The same factor gave the following concrete example illustrating how the price is affected:

If a bale weighing 500 pounds gross, containing 473½ pounds of cotton and 26½ pounds of baling material is bought for 10 cents per pound, under the rule of the New Orleans market, for instance, the seller would receive \$50 for his bale. If the tare rule was suddenly abrogated, the same bale on and in the same market would still bring the seller \$50. It makes no difference whether the buyer's calculations show that he is paying a fraction over 10 cents per pound for the gross bale less the deduction for the loss on bagging and ties, bringing the net to 10 cents per pound, or whether he is paying a fraction under 10 cents a pound for the cotton plus the value of the bagging and ties, bringing the total to 10 cents for the gross bale, the result is the same, and the seller realizes \$50 for his bale.

A close student of the cotton trade said:

The impression that when cotton is selling at 15 cents per pound the seller gets 15 cents a pound for the bagging and ties is fast being exploded. When the buyer pays 15 cents gross he not only allows in that price sufficient to offset the weight of the bagging and ties, but if not restrained by the law or rules of the market in which he operates he generally claims all he can get in the shape of so-called overweight.

A cotton factor in New Orleans said:

I know as a seller of cotton for export that 6 per cent tare is considered by the purchaser in making his price.

A merchant in Greensboro, N. C., said:

The weight of tare is, of course, always taken into consideration in the price of cotton because a mill can not spin tare.

One of the largest cotton manufacturers in the South in speaking upon this subject said:

I should say tare is always considered in figuring the price to be paid for cotton. * * * Our instructions, however, generally are that we do not wish to purchase cotton which is evidently overtared. The price paid for cotton is figured upon the allowance for the amount of tare stated (22 pounds per bale for uncompressed, and 24 pounds per bale when compressed). Ordinarily, if cotton shows excess tare we prefer simply not to purchase. If, however, we do purchase, the price is regulated so as to provide for the excess tare.

A cotton manufacturer in New England said:

We take tare into account in the price we pay.

In this connection it is worth pointing out that where a cotton merchant regularly ships his cotton without putting on excessive tare to make up for the 6 per cent rule, he usually can obtain a better price than is paid for cotton which is overtared. On this point a Bremen member of one of the largest exporting cotton houses in America said:

A good shipper who makes no attempt to put on excessive canvas and whose efforts are directed toward delivering his cotton in satisfactory condition will always get from 5 to 10 points more for his cotton than the careless or unreliable shipper.

The same idea is clearly brought out by the following excerpt from a statement of a prominent cotton merchant in this country:

We have customers we have held for many years. They are spinners. We rarely ever sell to the cotton merchant. Our customers know that they are buying less bagging from us than they do from other shippers and they are willing to pay us a higher price. A spinner is perfectly willing to pay for all the cotton he gets, and when he knows he is dealing with a firm which does not make additions to the weights he is willing to pay that firm a better price than one which does add weight by putting on extra canvas, and which adds still further to the weight by arbitrarily raising the weights shown by the scales.

This last statement clearly indicates that tare is taken into account by spinners in determining a price that they are willing to pay.

HOW TARE IS CONSIDERED IN DETERMINING THE PRICE PAID THE PRODUCER.

The preceding statements should be sufficient to dispose of the notion that the cotton producer is able to sell his tare at the price of cotton. They show that tare is invariably considered by the cotton buyer in arriving at the price which he is willing to pay. It is, in fact, incredible that the business should be conducted on any other basis.

A more important matter is the second question above noted, namely, whether the cotton producer is injured by the deduction due

to the c. i. f. and 6 per cent contract. This is a very difficult matter to determine. Whether the producer is injured depends chiefly upon the activity of competition among buyers. The general view of cotton merchants on this point is well illustrated by the following excerpt from a statement obtained from a member of a prominent firm:

The deductions for tare do not affect the price that the farmer receives for his product, but this is no argument in favor of present rules. If the deductions were 1 per cent, 10 per cent, or nothing, it would make no difference to the farmer so far as the price he receives is concerned. Supply and demand and competition regulate the price.

That is, this informant takes the position that the competition between buyers will result in giving the farmer the full price for his cotton. This is undoubtedly true in the cases where there is such competition and where it has its full effect. Unfortunately, the existence of such competition, and its remedial effect, can not always be relied upon. It is clear that there is always a possibility that the producer may be injured, and it is impossible to escape the conclusion that he sometimes is injured. Final opinions on this point may best be reached by studying carefully the actual process by which allowances are made for tare by the cotton buyer in determining the price which he will pay the producer.

The fact that the cotton shipper pays the farmer for the gross weight of his cotton while he receives pay from the European buyer only for the net weight, gives rise to the necessity for some sort of an adjustment in prices that will protect him from loss. He does this by taking account of tare in the price he is willing to pay the farmer.

As already explained, the c. i. f. and 6 per cent contract obligates the seller to deliver cotton in the foreign port free from all charges, freight prepaid or to be deducted from the invoice cost, and insured for its value (plus 10 per cent to cover any possible advance in price). Finally, 6 per cent is deducted from gross weight to get net weight. The seller agrees to deliver cotton to the buyer at a stipulated price, and his first concern, therefore, is to know what he can pay for it in the interior or at the American port in order to fulfill his contract and have a profit. To find the price he can pay he deducts from his selling price all the items entering into the cost of buying the cotton and transporting it to his customer. Since he buys it gross weight and sells it net weight, his first deduction is for tare, because while he buys gross weight he must fix the price on a net-weight basis. When he sells his cotton he has to deduct 6 per cent to cover the tare and "draft." Then he must deduct the freight, the expense of handling, the cost of doing business, insurance, commissions, and every item of expense attaching to the transaction.

A number of merchants furnished the Bureau with examples of their methods of calculating these deductions. These calculations are known in the trade as "limit" calculations.¹ Naturally they are

¹ For a full explanation of the use of buyer's limits, see the Report of the Commissioner of Corporations on Cotton Exchanges, Pt. IV, pp. 106-108.

all substantially the same. They vary only in detail. Three of these examples, together with the assumptions on which the calculations were made, and the results thereof, are here given. Some of these items, such as ocean freight rates and certain expenses, vary from time to time, while tare, the cost of insurance, and some other items depend, of course, upon the price of cotton.

The following is from a large shipper in New Orleans:

Assume that a merchant is offered 6 pence (12 cents) for cotton delivered on c. i. f. and 6 per cent terms in Liverpool. The American shipper determines the price he can pay, say, at the port, by making deductions as follows:

	Points. ¹
6 per cent for tare and draft on 12 cents.....	72
Freight, say	55
Insurance, say	10
Expense, including compressing, drayage, weighing, sampling, inspecting, etc., say	20
Profit, say	8
Total	165

12.00 cents less 1.65 cents equals 10.35 cents, the price the shipper can pay. If the cotton is in the interior, there must be deducted the cost of getting it to the port. Now, if the cotton is bought flat and the price is arrived at in this way, it is evident the farmer has had 6 per cent deducted for tare and draft, whereas he has on it only about 5 per cent. On the other hand, the shipper making it has this difference between the tare on the flat cotton and the 6 per cent to "play on." He may, in order to meet competition in buying, give this difference to the farmer or the interior merchant. In other words, instead of paying 10.35 cents he can afford to pay (if the cotton will bear 5 pounds extra canvas) 6 points more, or 10.41 cents. These 6 points are the profit growing out of the 5 pounds of patching used in the compress. The 5 pounds at 10.35 are worth 52 cents. They cost 22 cents, which leaves a net profit of 30 cents, or 6 points.

A Dallas (Tex.) merchant illustrates his method of calculation as follows:

The price paid for cotton in the interior is based on Liverpool future quotations. The cotton merchant bases his limits on the quotation at which he can hedge his purchase. Say to-day, March 9, May-June opens in Liverpool at 5.80 pence. I figure that I can sell in Liverpool at 50 points on this price for good middling cotton, or 6.30, which is equivalent to 12.60 cents. I then make deductions as follows:

	Points.
Freight to Galveston (includes compressing)	51
Wharfage	1½
Ocean freight	47½
Insurance	8
Exchange brokerage	2
Expense of doing business	10
6 per cent for tare	75
Total	195

¹ A "point" is one-hundredth of a cent.

12.60 cents less 1.95 cents equals 10.65 cents, the price of good middling cotton. Middling cotton is worth 25 points less than good middling. So my limit to my buyer to-day is 10.40 cents for middling cotton. In this transaction I have counted nothing for profit. I am expecting to make my profit from patching that I can put on in the compress. If there were no profit in patching, I would deduct from the above price, 10.40 cents, say, 8 to 10 points for my profit.

That is to say, in the first case the merchant actually figures in his profit, and then states that there will be an additional profit to him by adding tare, but that competition may force him to give this tare profit to the farmer.

In the second case, the merchant does not figure in any specific item of profit, but expects to get his profit from added tare or "patching."

A firm of cotton merchants in Oklahoma, who make their calculations in great detail, submitted an example of their usual and formal method of arriving at a price they can pay, the substance of which is given below. It should be noticed that this calculation is based on the Liverpool price of May-June contracts which are assumed to be selling at 5.70, and the merchant calculates that he can afford to sell cotton, delivered in Liverpool, at 30 points "on"¹ (above) this quotation, thus making his invoice price 6 pence.

	Pence.
May-June (hedge month) Liverpool future contract price-----	5.70
Basis "on" for strict middling-----	.30
Invoice price c. i. f. and 6 per cent.-----	6.00
	<hr/>
	Cents.
Equivalent in American money-----	12.0000
Less 6 per cent.-----	.7200
Price c. i. f.-----	11.2800
Less inland and ocean freight-----	1.0000
Price c. and i.-----	10.2800
Insurance at 1 per cent on 11.30 (10.28 plus 10 per cent)-----	.1130
Cost, 10.28 less 0.1130-----	10.1670
	<hr/>
Charges:	Per cent.
Broker's commission-----	$\frac{1}{2}$
Exchange brokerage-----	$\frac{1}{8}$
Exchange-----	$\frac{1}{2}$
Interest-----	$\frac{1}{2}$
Agent's commission-----	1
Total $2\frac{1}{8}$ per cent of 10.28-----	.2377
Our charges (bagging and brokerage)-----	.0500
Total charges-----	.2877

¹ For a complete description of this method of selling cotton at points on or off the future quotation, see the Report of the Commissioner of Corporations on Cotton Exchanges, Pt. I, pp. 106-107.

	Cents.
Less weight franchise, 2 per cent of 10.28 ¹ -----	0.2026
Net charges-----	<u>.0821</u>
Limit, 10.1670 less 0.0821, net charges-----	10.0849
Gain in exchange ² -----	.0351
Net price can pay for strict middling, f. o. b., 10.0849 plus 0.0351-----	10.1200

In commenting on their methods of making price calculations, a member of this firm said, in substance:

The foregoing limit calculation needs but little explanation. It should be noted that insurance is computed on the net value of the cotton landed in the foreign ports (plus 10 per cent) and that the charges are computed on the same price. The total charges are diminished by the estimated profits on patching and added weight for franchise. All cotton merchants do not make this deduction. The price shown in this computation is the price that can be paid f. o. b. cars, with no allowance for profit. Of course the buyer will make his purchase for as much less than this net price as it is possible for him to do. If he makes it at this price, it will show no profit. His profit depends upon his buying at as much less as possible. The deduction from the charges on account of weight franchise, amounting to 2 per cent, is made up of 5 pounds of bagging added at the compress³ and 5 pounds per bale added to the weights for the franchise, making 10 pounds, or 2 per cent of the bale, and this 2 per cent is computed on the net landing price before the charges are deducted.

The effect of the 6 per cent deduction for tare can perhaps be better illustrated by an assumed transaction. In this transaction the figures have been adjusted for convenience of calculation so as to produce even points. As a matter of fact, however, they are representative. Cotton shippers in the interior usually consider 2 cents per pound as about the proper difference between the interior price and the Liverpool price.

Let it be assumed that a shipper is offered sixpence for cotton delivered in Liverpool. This is equivalent to 12 cents United States money. In order to arrive at a price he can pay the farmer, he makes the following deductions from the Liverpool price:

	Points.
Tare, 6 per cent of 12 cents-----	72
Inland freight, including compressing, say-----	50
Ocean freight, say-----	55
Insurance, say-----	11
Expense of doing business, say-----	12
Profit, say-----	10
Total-----	<u>210</u>

¹ This 2 per cent deducted from cost or, in other words, added to price, is made up of 5 pounds added bagging in the form of patches and 5 pounds franchise, which is here deducted from the charges, thus giving the farmer the profit from these sources.

² Sterling exchange is reckoned at par when a pound sterling can be sold at \$4.80. If the shipper can sell his sterling draft above par, he reckons a profit on exchange. If he has to sell it below par, he reckons a loss.

³ The cost of this bagging is a "charge" in the calculation. (See preceding page.)

Deducting 210 points (2.10 cents) from 12 cents, the Liverpool price, leaves 9.90 cents, the price at which the shipper hopes to buy from the farmer. This calculation, however, contains a hidden element of profit over and above the 10 points (50 cents per bale) specifically provided for. It will be observed that 6 per cent, or 72 points, is deducted for tare. The cotton bought from the farmer has only about 4.4 per cent of tare, representing 53 points. Since 72 points have been deducted, there is here reserved a margin of 19 points for possible profit less some deductions as will now appear. If the farmer in the calculation above given gets only 9.90 cents for his cotton, he is injured. To make the matter clear, it is better to convert the tare involved into its weight in pounds.

A standard bale of cotton weighs 500 pounds, and 6 per cent of this is 30 pounds; that is, 30 pounds have been deducted from the farmer's bale for tare. As a matter of fact, he had only 22 pounds tare on the bale. The reason the shipper took off 30 pounds for tare is that that much will be taken off in Liverpool. Since there are only 22 pounds on it when he buys it, he very frequently adds 8 pounds of tare to make up the 30 pounds to be deducted. This added tare is in the form of patches. He pays for the 8 pounds of patches, say, 32 cents, and the freight and expense on 8 pounds at \$1.28 per 100 pounds is 10 cents, making his outlay on account of patches 42 cents per bale. He sells the 8 pounds for 96 cents (equivalent to 19 points), thus making a profit of 54 cents. Thus in the transaction under consideration the shipper has an actual profit of \$1.04 per bale, consisting of 50 cents profit provided for in the 10 points shown in the calculation and 54 cents (roughly 11 points) profit in patches. This assumes, of course, that he is able to retain for himself this entire profit, and that competition does not force him, as in the previous example, to share it with the farmer.

The profit that may be derived by the shipper from patches can be illustrated in another way. Assume that the freight from an interior point in the United States to Liverpool is \$1.05 per hundred pounds, insurance 11 cents per hundred pounds, and the expense of doing business is 12 cents per hundred pounds, this is a total charge of \$1.28 per hundred pounds. Assume further that a shipper buys a bale of cotton weighing 500 pounds gross at 10 cents per pound gross weight, and that 22 pounds of this is tare. He adds 8 pounds of patches to the bale and ships his cotton to Liverpool, paying all charges, and sells it for 12 cents a pound net. His account with this transaction would stand as follows on the debit side:

500 pounds gross, at 10 cents.....	\$50.00
8 pounds patches, at 4 cents.....	.32
Freight on 508 pounds, at \$1.05 per 100 pounds.....	5.334
Insurance on 508 pounds, at 11 cents per 100 pounds.....	.559
Expense on 508 pounds, at 12 cents per 100 pounds.....	.61
Total.....	56.82

He sells 508 pounds, less 6 per cent, or 478 pounds, at 12 cents per pound; therefore there would be on the credit side:

478 pounds net, at 12 cents.....	\$57.36
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The difference between the debit and credit sides of the account is 54 cents, which is the net profit.

It should be observed that in the foregoing assumed transaction the profit of 54 cents per 500-pound bale was derived from patches and that this is the only item of profit. If the shipper had not added 8 pounds of patches, his account would have been as follows on the debit side:

500 pounds gross, at 10 cents.....	\$50.00
Freight on 500 pounds, at \$1.05 per 100 pounds.....	5.25
Insurance on 500 pounds, at 11 cents per 100 pounds.....	.55
Expense on 500 pounds, at 12 cents per 100 pounds.....	.60
Total.....	56.40

He would have sold 500 pounds, less 6 per cent, or 470 pounds, at 12 cents per pound; therefore there would be on the credit side:

470 pounds net, at 12 cents.....	\$56.40
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In this second calculation he merely "comes out even." He sells 470 pounds, instead of 478 pounds, and receives 96 cents less for it, thus indicating that the 8 pounds of added weight in the former calculation are worth 96 cents gross. This does not mean that the buyer in Liverpool in the first case was injured to the extent of 8 pounds, but it does mean that in the second case he profited to that extent. The bale contained 478 pounds of cotton net when it left the farmer, and it contained the same quantity when it reached Liverpool. By adding 8 pounds to the gross weight the 6 per cent deduction left 478 pounds, and by not adding anything to the original gross weight of 500 pounds the 6 per cent deduction left only 470 pounds to be paid for.

The reason the second transaction does not show a loss to the shipper by virtue of selling less cotton than he had is because in figuring his buying price he took the 6 per cent deduction into account and made his buying price 0.72 cent per pound (6 per cent of 12 cents) less because of it.

Net effect upon the farmer.

If the shipper makes a sufficient allowance for profit in his price calculation, he is not entitled to a further profit on patches. Shippers say that as a rule they get only one profit. They contend that if they make a profit on tare they do not expect another profit; or if they do calculate a profit in the buying price, they give the profit on tare to the farmer or interior seller. They argue that competition among cotton buyers is so keen that they can not in any way secure more than a fair profit. In other words, their contention is that in a case

like the one in question the profit on tare of 54 cents a bale, or, say, 11 points, is a trading margin, and that they almost invariably give it to the farmer. In such a case they argue that the farmer would get 10.01 cents for his cotton instead of 9.90 cents. Some shippers always include the profit on tare in their calculations as a credit item. However, all shippers do not do this. The effort of the buyer of cotton is to get it at as low a price as he can. He calculates a safe price and buys for as much less as he can. It is clear that the buyer is not going to give away his tare margin unless he is forced to do so. He does not always have to do it, and when he does not the farmer loses. Whether he loses or not, the important fact is *that he may lose it*, and the vice of a needless uncertainty is present.

The arguments used by shippers might lead some to the conclusion that the farmer not only does not suffer because of the 6 per cent deduction for tare, but that in some cases he actually profits thereby. Whether it is true at all is very problematical; in fact, it is so doubtful that it may reasonably be dismissed without discussion. On the other hand, if buyers are able to keep for themselves the profit on tare and the usual profit besides, the farmer is certainly injured to the extent of the profit on the tare. In other words, there is no way in which the farmer, as a rule, can possibly get any advantage on account of the 6 per cent deduction for tare. If he could, it would mean that some one was paying the price of cotton for tare. The theory that this is ordinarily so has already been discredited. Moreover, there is always the possibility that he may suffer some disadvantage on account of it.

But, granting that the farmer is not seriously injured, the 6 per cent rule is, nevertheless, objectionable. It compels the cotton trade to take account of an unnecessary factor in price adjustment. Furthermore, it virtually forces the business to be done on what is equivalent to a false standard of weights, by inducing the middleman to change the gross weight of the bale in course of distribution. Any intricate computations in price adjustment, such as are necessarily involved in present tare calculations, can not ordinarily be of any possible benefit to the producer; instead, they inevitably tend to his disadvantage.

REMEDIES PROPOSED FOR TARE EVILS.

No one denies that prevailing tare customs have brought about indefensible practices in the cotton trade. These evils are chiefly due to the fact that the tare rules are not in accord with actual facts. Their application results in a wrong basis for price adjustment that in effect establishes a false standard of weights. Besides this, the rules are not uniform, and they are treacherously complex.

There is practically unanimous sentiment in the trade in favor of selling cotton net weights. Up to this time, however, there has been

8 REPORT OF COMMISSIONER OF CORPORATIONS ON COTTON

He sells 508 pounds, less 6 per cent, or 478 pounds, at 12 cents per pound; therefore there would be on the credit side:

478 pounds net, at 12 cents-----

The difference between the debit and credit sides of the account is 4 cents, which is the net profit.

It should be observed that in the foregoing assumed transaction the profit of 4 cents per 500-pound bale was derived from the fact that this is the only item of profit. If the shipper had sold 500 pounds of patches, his account would have been in debit side:

500 pounds gross, at 10 cents-----

Freight on 500 pounds, at \$1.05 per 100 pounds-----

Insurance on 500 pounds, at 11 cents per 100 pounds-----

Expense on 500 pounds, at 12 cents per 100 pounds-----

Total-----

He would have sold 500 pounds, less 6 per cent, or 470 pounds, at 12 cents per pound; therefore there would be on the credit side:

470 pounds net, at 12 cents-----

In this second calculation he merely "comes out" with 470 pounds, instead of 478 pounds, and receives 56.4 cents, thus indicating that the 8 pounds of added weight in the second calculation are worth 96 cents gross. This difference in Liverpool in the first case was in the credit side, but it does mean that in the second case the bale contained 478 pounds of cotton. The bale contained 478 pounds of cotton, and it contained the same quantity of cotton in Liverpool. By adding 8 pounds to the gross weight of 500 pounds the 6 per cent deduction left 478 pounds, and by not adding the 8 pounds to the gross weight of 500 pounds the 6 per cent deduction left 470 pounds to be paid for.

The reason the second transaction does not show a profit is by virtue of selling less cotton than he bought. By buying price he took the 6 per cent deduction, and made his buying price 0.72 cent per pound, instead of 0.70 cent per pound, because of it.

Effect upon the farmer.

If the shipper makes a sufficient allowance for tare in his calculation, he is not entitled to a further profit. That as a rule they get only one profit, and that is by making a profit on tare they do not calculate a profit in the buying price of the cotton from the farmer or interior seller. The reason the cotton buyers is so keen to keep the farmer in a fair profit. In

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standardizing bagging.

plan, namely, that of establishing a standard for the
is to be used upon cotton, is thought by a majority of
and manufacturers interviewed to be practicable. It

found no way by which the exact amount of tare can be determined without considerable expense, and most of the efforts of the trade and of cotton manufacturers have been directed toward the prevention of abuses under existing rules rather than toward changing the rules with a view to selling cotton net.

In order that cotton may be sold net without controversy it is necessary that some practicable means be devised by which the tare on a bale can be known. Three methods have been suggested as a possible means to this end.

1. Mark the weights of tare put on at the gin and correct these weights at the compress by adding to them the weight of the patches used at point of compression.

2. Standardize the canvas and bands to be used in packing cotton and prescribe the number of yards of bagging necessary properly to cover a bale of a given weight and the size and weight of necessary patches put on at the compress; also the number and weight of the bands.

3. Let actual tests for tare be made in all cases by taking a given percentage of the bales in a lot and apply an average of the tare found by such test to the entire lot.

Suggestion that tare be marked on bale at the gin.

It is the almost universal opinion of cotton merchants and cotton manufacturers that the plan for marking tare on the bale at the gin is impracticable, at least under present methods of ginning. In the first place, it is argued that the bagging used to cover American cotton is so flimsy and coarse that marks placed upon it are easily obliterated. Furthermore, it is contended that the custom among cotton producers and cotton merchants in the United States of exposing their cotton to the weather makes it difficult to place a mark on any character of covering that may not become erased or blurred. Still again, even assuming that an indelible mark could be placed on the bagging, it is argued that the plan of marking the tare at the gin is still objectionable because of the manner in which cotton is handled. A bale of cotton is pressed at the gin to a density of about 11 pounds per cubic foot. Before it reaches its final destination it is almost invariably re-pressed to a density of about 22 pounds or more to the cubic foot. In the process of compressing the original bands are removed and a new set of shorter bands is put on. It is in this process also that patches are put on the bale to cover sample holes. Therefore, marks put on at the gin, even if they were legible, might be covered up by patches and an entirely new marking would have to be made. Such addition of patches at the compress changes the original amount of tare.

It has been suggested by some that instead of placing the marks on the canvas they be placed on a metal tag and that this tag be attached

to the bands. This is impracticable for various reasons. As already stated, the bands are changed at the compress and this marking process would have to be repeated. In the second place, it is not uncommon for one or more bands to be lost from a bale of cotton. Since there is no way of knowing what band would be lost it would be necessary to put a tag on each band. Moreover, the tags might easily be shifted. At any rate marking the weights on tags and placing tags on the bands would unquestionably involve an expense that the trade would not be willing to bear.

However, there has been suggested one plan of marking the weight of the tare on the bale at the gin (and again at the compress) that seems to be worth careful consideration. It is suggested that instead of marking the tare on the canvas a white patch about 2 feet long and 1 foot wide be used on every bale, this patch to be of closely woven material. It is proposed that the ginner mark the weight of the canvas and bands on this patch, together with his name, the gross weight of the bale, the net weight, and the date it was ginned. When such a bale reaches the compress there would be marked on this same patch the weight of the patches put on at the compress, the name of the compress, a check mark to indicate the employee who marked it, and the date. Then it is suggested that the law should require all cotton entering into interstate and foreign commerce be thus marked and make it a criminal offense to include any false statement in the marking.

Cotton exported from this country to Japan is required by Japanese mills to have all marks placed on a white patch, and it usually reaches its destination with the marking undisturbed. This patch, however, is put on at the compress and not at the gin. It has been suggested that it would be practicable to put on this patch at the gin, say, at one end of the bale, on the side (not on the head), and that it need not be subsequently disturbed, as there would be ample room for sampling without cutting through this patch.

Grave doubt, however, is expressed as to whether or not anyone in the trade would be willing to accept the marks placed on a bale of cotton at the gin. The help used about the gins and even at the compresses is usually of a character not to be relied upon. Penalties might be imposed for false marks, but it would be of little advantage to the purchaser of cotton if he found he had paid for tare instead of cotton and knew that his only remedy would be against some one who was not financially responsible.

Suggestion for standardizing bagging.

The second plan, namely, that of establishing a standard for the wrapping that is to be used upon cotton, is thought by a majority of the merchants and manufacturers interviewed to be practicable. It

is now quite generally agreed that 6 yards of 2-pound bagging are sufficient to cover a bale of cotton at the gin and that 6 bands, weighing in the aggregate 9 pounds, are sufficient for ties. There is also practical agreement as to the patches necessary to cover sample holes. No one seriously contends that it will require more than 2 patches weighing 2 pounds each to the bale. It is customary to place 6 bands on the bale at the gin and 8 bands (2 additional) at the compress. The bands used at the compress are shorter than those used at the gin, and the 8 weigh almost exactly the same as the 6 long ones.

There are three difficulties pointed out as being in the way of thus establishing a standard for tare. One is that on account of the variation in the size of bales, as cotton is now put up, there would be, with a fixed quantity of canvas for each bale, more tare on a small bale than would be necessary to cover it. This does not seem to be a very serious objection because the excess would be very slight and it would be more than compensated for in the fact that the tare would be absolutely known. Another objection is that there would be serious difficulty in procuring canvas of uniform weight. As canvas is now manufactured it varies from $1\frac{1}{2}$ pounds to $2\frac{1}{2}$ pounds per yard. It has been suggested in this connection that the Federal Government could require manufacturers of bagging to mark the weight upon the margin of the canvas and could impose penalties for serious variation from the marked weight. Still another objection is that the character of the bagging now used is such that it always weighs more before it is put on the bale than it does a few hours afterwards. Canvas is treated with a solution ostensibly to make it less combustible, and it therefore contains more or less moisture when put into rolls. As soon as it is unrolled and exposed to a dry atmosphere this moisture begins to evaporate and in a short time the canvas has lost considerable weight. This objection might be met by requiring the manufacturer to mark the dry weight on the canvas. On the other hand, it is also pointed out that the canvas, being made of a very coarse and porous material and loosely woven, after thus drying out, may later absorb moisture and gain in weight. This latter objection does not seem to be a serious one. That same condition exists now and in the calculations for tare the matter of absorption and evaporation are not taken into account. If there is an obvious excess of moisture, it is estimated and a deduction is made for it in addition to any tare deduction. That certainly could be done as well under a system standardizing tare as it can under the existing system. This difficulty, however, could be substantially met by using a kind of bagging that is not such a great absorbent; such, for instance, as is used on Egyptian cotton. There is no good reason for the continued use of a coarse, porous bagging when a better article can be had at equal or less cost.

Suggestion for actual tests.

The third proposition, namely, one providing for actual tests of the tare on all cotton sold, seems to be utterly impracticable. The plan is that a given percentage of each lot of cotton, say, 10 per cent, be stripped, the canvas and bands weighed, and the average weight of the tare from the bales thus stripped shall be applied to the entire lot. This is practically what the rules provide for now, as between the merchant and the spinner, and even in that one transaction the test is, as has been seen (p. 23), often omitted.

This suggestion of actual tests seems to miss the whole point of current efforts to standardize tare. The very purpose of standardizing tare is to make such actual tests unnecessary. To demand actual tests in all cases would simply mean an extension of the evil which it is desired to eliminate.

PRACTICABILITY OF COMPRESSING COTTON AT THE GIN.

As a corollary to any plan for exactly determining tare is the suggestion of compressing cotton at the gin. The presses now generally used at the gins pack the cotton to a density of only about 11 pounds per cubic foot. The required density for a bale in satisfactory condition for shipment over long distances, especially by water, is at least twice as great. This final packing, known as compressing, is now done in a separate operation at compresses, and not at the ginneries.

Egyptian and Indian cottons are sufficiently compressed at the gin, thus avoiding re-pressing. Cotton packed in this manner reaches its destination in satisfactory condition, and with so little controversy over tare that European cotton merchants and spinners, perhaps naturally, suggest the adoption of this method in the United States. There are difficulties, however, in the way of adopting such methods in this country which are not appreciated by those unfamiliar with the method of marketing American cotton.

In Egypt and India cotton is sold and concentrated "in the seed" before ginning. This is not done to any great extent in the United States, nor is it likely that it ever will be. Again, a comparatively few concerns handle the bulk of the Indian and Egyptian crops, whereas in the United States there are hundreds, if not thousands, of cotton buyers. These numerous buyers undoubtedly create active competition. If the number were reduced to a few, it is probable that much of this competition would cease, a change which would be very undesirable. If cotton is not sold in the seed as fast as it is picked (harvested), it must be housed to protect it from the weather. In its loose condition before it is ginned it requires vastly more warehouse space, which the producer would have to provide. The fire risk is very much greater, and the cost of insurance would be greatly

increased. It is thus seen that the farmer would either have to provide warehouse room to store his cotton, and incur additional expenses until market conditions were satisfactory to him, or else he would be compelled to sell it as fast as it was gathered. He is not likely to do either. He now simply has it ginned promptly and bales it. This means that it will not be compressed while in his hands, for under present conditions ginneries are not generally equipped to do compressing.

There is no doubt that the introduction of gin compresses (that is, presses at the ginney in which the cotton can be packed to a density of 22 pounds or more per cubic foot) would go a long way toward solving the tare problem. A lighter canvas could be used, and the evils of patching should disappear, since patches could also be standardized just as in the case of Indian and Egyptian cotton.

There is strong antagonism, however, to a gin-compressed bale. There are large sums of money now invested in compresses, and the general introduction of gin presses would destroy the present compress business. Naturally the owners of compresses will oppose the introduction of a system that will ruin their own business.

Some cotton merchants object to a gin-compressed bale because they say it is more difficult to sample a bale that is densely pressed than it is one loosely pressed. They contend that because of this difficulty in sampling the adoption of the gin-compressed bale will encourage fraud in packing cotton. This appears to be mere assertion. Fraudulently packed and mixed packed cotton can usually be detected in any kind of bale.

The advocates of gin compression, on the other hand, insist that a compressed bale can be satisfactorily sampled. They truthfully say that it is now done. They point to the fact that Indian and Egyptian cotton is sampled, and that cotton which is now compressed at gins in the United States is also sampled; that, furthermore, much cotton is satisfactorily sampled after going through the ordinary compress; that thousands of bales go to factors, particularly in New Orleans, in a compressed condition, and that all of this cotton is sampled. To say that compressed cotton can not be satisfactorily sampled is incorrect. It is true that it is not so easy to sample a compressed bale as one loosely pressed, but it can be done, and it is done.

The owners of one type of round-bale press declare that the grade of cotton in their bale can be determined without drawing a sample, and that it is only necessary to remove the head of the bale in order to class the cotton from the exposed end. A very light canvas is used on this round bale and no iron bands are necessary. The cost to the farmer for tare on the round bale is approximately 35 cents per 500 pounds of cotton. Exactly the same quantity of canvas is

used on every bale, and there is never any question as to how much tare there is. A majority of cotton merchants, however, declare that the grade of cotton in a bale can not be determined without drawing a sample.

A number of gin compresses have been invented and tested, and some of them are in practical use. These compresses are of two general kinds, one type making a square bale similar to the bale now so common, and the other making the so-called round bale. Some of the round bales at first met with criticisms from spinners because of difficulty in working the cotton, due to a hard center, resulting from too great a density. It is claimed, however, that this difficulty has been overcome. There never was any such objection to the gin-compressed square bale.

A very practical difficulty in the way of the adoption of either of these presses has been their large cost. An ordinary press, such as is now used at the gin, costs perhaps less than \$1,000. Most of the gin compresses, capable of doing final compressing, can not be installed for less than three or four times as much. This high price practically prohibits their general use, because the average ginning establishment does not handle enough cotton to warrant so large a capital expenditure. There are, however, two cylindrical presses which it is claimed can be installed for but very little more than the ordinary square press now used.

A square bale is now being compressed at some gins. The one perhaps most widely known has been tested, and, judging from the testimonials of spinners, the work is entirely satisfactory to them. This bale is 20 by 25 by 52 inches, compressed to a density of 30 pounds per cubic foot, and weighs 500 pounds. Any kind of covering can be used. That most commonly used is of burlap 46 inches wide, weighing 16 ounces to the linear yard. It requires 4 yards to cover a bale, and the cost is about 8 cents per yard. Seven bands are used, and the canvas and bands together weigh about 12 pounds per bale. This press costs \$4,500 installed. Its capacity is 60 bales per day.

The high cost of this press would seem to prevent its general use. Since farmers must haul their cotton to the gin in the seed, it is obvious that the ginneries must be at a reasonably short distance from the farms. A community, therefore, to produce sufficient cotton to warrant the installation of an expensive ginning plant must not be scattered over a wide territory. There are in the United States more than 25,000 active ginning establishments, scattered over more than 850 counties. In these counties there are perhaps more than a million farmers who annually plant more than 30,000,000 acres in cotton. The capital outlay necessary to equip all of the ginneries of the country with presses costing not over \$4,000 each would not be

less than \$100,000,000. Presses now in use would have to be abandoned, and this would involve an absolute loss of many millions of dollars. There are undoubtedly thousands of ginneries now in operation that do not handle enough cotton to warrant any increased capital expenditure. It is evident, therefore, that the universal adoption of a gin press that is much more expensive than that now in common use is impossible.

It is true, nevertheless, that a large percentage of the crop is grown under such conditions of concentrated production that it is economically feasible to install expensive ginning plants to care for it. There seems to be no reason, however, for the adoption of any specific style of gin compress. In those communities where there is sufficient cotton to justify the installation of a high-priced press it can unquestionably be done. In other communities where it would not be profitable to install a high-priced equipment there could be brought into use equipment at a lower price if a satisfactory low-priced press is provided.

ECONOMIC ADVANTAGES IN USING LESS TARE.

It is apparent from what has been said that 16 pounds, and probably 15 pounds, of canvas, including necessary patches, even of the kind now used, are sufficient to cover a bale of compressed cotton. The present allowance for canvas under the c. i. f. and 6 per cent rule in the case of actual tests is $17\frac{1}{2}$ pounds per bale, and this is very often greatly exceeded in practice. Assuming, however, that there were no excess above the $3\frac{1}{8}$ per cent allowance, there are used unnecessarily on each compressed bale from $1\frac{1}{2}$ to $2\frac{1}{2}$ pounds. It is probably safe to assume that 80 per cent of the crop is compressed. All that is exported is compressed. All that going to New England mills and a large percentage of that going to southern mills is likewise compressed. It would seem, therefore, that 80 per cent is a conservative estimate. In a crop of 12,500,000 bales (in 1911 the crop exceeded 16,000,000 bales) there are, therefore, 10,000,000 bales compressed. With $1\frac{1}{2}$ pounds of unnecessary and useless canvas on each bale there is a total of 15,000,000 pounds. The first cost of this useless canvas, the freight and charges for insurance, handling, etc., amount in the aggregate to a considerable sum each year when calculated on the minimum allowance. If calculated on the actual excess canvas, the absolute waste is very much more.

The head of a firm of cotton merchants in Dallas, Tex., in speaking of the economic loss due to present tare rules, said:

Admitting for the sake of argument, however, that the farmer does not suffer in any particular and that neither the merchant nor the spinner suffers on account of present tare customs, there is still an unanswerable argument against the present custom of putting on an amount of canvas in excess of

that necessary to protect the cotton. Our firm has this year spent in round numbers \$40,000 for patches. If the rules under which we export cotton were fair, we could have used about one-third of the quantity of patches that we have used. In other words, two-thirds of the \$40,000 we have spent for patches was absolutely unnecessary to protect the cotton. This two-thirds of \$40,000 was an absolute economic loss. We did not lose the money; the cotton manufacturer did not lose anything either, but it was a burden placed upon the cotton, and the consumers of cotton goods have it to pay. It would be difficult to estimate the amount of economic waste involved in this one item alone for the entire cotton crop each year. It would undoubtedly be enough to provide housing facilities for every bale of cotton grown in the United States, and with adequate housing facilities the amount of tare could be still further reduced, because a lighter canvas could be used.

It is apparent, therefore, than even the minimum amount of canvas of the character now used in covering cotton involves a serious waste.

Advantages in the use of lighter bagging.

The above discussion is based upon the character of canvas now used to cover cotton and the practices now generally employed. The economic waste involved in the present tare customs is much greater than above pointed out when the matter is considered in the light of the quantity and character of covering that might be used without disadvantage to the cotton itself. A bale of Egyptian cotton weighing 720 pounds is well protected with $4\frac{1}{2}$ pounds of canvas. A bale of Indian cotton weighing 400 pounds is well protected with about $2\frac{1}{2}$ pounds of canvas. It is possible to pack 500 pounds of cotton in round bales and protect it perfectly with about 3 to 5 pounds of canvas, and on a gin-compressed square bale it need not exceed 4 pounds. It has been suggested by many cotton merchants that a lighter canvas would amply protect cotton. This is undoubtedly true. The adoption of a light canvas, however, is likely to meet with opposition from the producer and from some cotton merchants. Producers generally believe that they make a profit on bagging and ties. It is absolutely certain that as a general rule they do no such thing. This report proves this. The best way to convince farmers of the mistake they are laboring under is to pay a better price for cotton covered with light canvas than that covered with heavy. In the case of some cotton now packed in round bales and covered with a light canvas this is already done, and the increase in price paid for cotton so packed is said to be sometimes more than half a cent per pound.

Some merchants object to a light covering on the ground that it does not so well protect cotton from damage when exposed to the rain. This can not be accepted as a valid objection if the bales were properly handled. The purpose in covering cotton is to protect it from dirt and loss and not to protect it from the weather. It is

not an uncommon thing for bales of cotton to lie on the ground on the farmer's premises for weeks or months without any protection except the bagging put on at the gin. It is likewise exposed for longer or shorter periods of time on open platforms of railroad stations and compresses. Damage of this sort can be avoided only by properly housing cotton. The mere wrapping should not be relied on for such purpose in cotton any more than it is in any other equally valuable and easily damaged commodity. In considering the character of canvas to be used, the one prime object to be kept in view should be the least expensive article that will protect cotton from ordinary damage and loss. The attempt to provide a cover of bagging for the purpose of effectively protecting it from rain or from so-called "country damage" should be eliminated.

Economic advantages of gin compression.

The canvas and bands of the character now used cost the producer about 75 cents to \$1 per bale, and when the cotton is re-pressed it is found necessary to put on additional canvas in the form of patches to the value of from 10 cents to 25 cents per bale. If 500 pounds of cotton can be packed in cylindrical bales at the gin at a cost of not exceeding 35 or 40 cents for tare, or in a square bale for 55 to 65 cents, it is readily seen that a very large saving might be brought about by adopting a different kind of covering and a different method of packing. It seems possible that about half of the present cost of bagging and ties might be eliminated entirely. It now costs 50 cents per bale to compress cotton. If it were compressed at the gin, this expense (or at least most of it) would be saved.

In addition there would be saved freight and other charges on the amount of packing material now used in excess of what sound business economy seems to suggest. The saving in freight should indeed be much greater than the cost of transporting the unnecessary tare. The usual density of a bale of cotton as now compressed is about 22 pounds per cubic foot. Most, if not all, of the gin compresses that are now used, or have been used, reduce the bale to a density of 30 pounds per cubic foot or more. Thus, a gin-compressed bale occupies very much less space than one compressed in the usual way. In the case of cotton as now pressed at the gin only 25 bales can be loaded in an ordinary box car; when it is compressed in the usual way 50 bales can be put into a car. In the case of gin-compressed cotton, on account of its greater density, round bales equivalent to 100 bales as at present pressed at the gin can be loaded into a car, and 80 gin-compressed square bales can be so loaded.

The saving thus made possible to railroads in equipment and to steamships in space should enable them to make considerably lower freight rates. The handling of 100 bales of cotton by railroads as

now done is very much more costly than it would be under a system of gin compression. As cotton is now handled it is concentrated at local points along the railroad for initial shipment. The facts pertaining to the handling of, say, 100 bales of cotton will well illustrate the economies possible through gin compression. As cotton now comes from the gin it requires four box cars to hold 100 bales. It is loaded into these four cars and carried to the compress. The nearest compress may be only a few miles away or it may be 100 miles or more. Upon reaching the compress the cars are all unloaded. The cotton is handled into the press and back to the cars. After compression two cars are needed to transport the cotton to the port. Thus, four cars are required to handle 100 bales to the compress and two cars from the compress to the port. The two cars may remain idle while the cotton is being compressed, which may be a day or several days. When cotton is compressed at the gin and once loaded it does not have to be stopped for compression but goes directly to the port without delay. There would thus be saved not only a large part of the freight equipment now employed in transporting cotton, but perhaps half or more than half of the time now necessary could be saved. One shipper of cotton stated to a representative of this Bureau that by actual test made in the State of Texas he found that it required more than 30 times as many "car days" to move a given quantity of cotton from point of origin to the port under the usual system as it did for gin-compressed bales.

It is apparent that with such economies the railroads could and undoubtedly would make lower rates for cotton than are now charged. Steamship companies recognize the advantage of the greater density of gin-compressed cotton and make a rate about two-thirds as high as the ordinary rate. It is not unreasonable to suppose that railroads could afford to do as well if not better.

From the above discussion it appears that the cotton trade is burdened with a heavy charge that legitimately benefits no one interested in cotton. By changing the methods of packing there could be saved several million dollars more. Not only do these unnecessary expenditures fail to benefit anyone, but they are an added burden to the cost of manufactured goods and must be paid by the ultimate consumer.

COTTON SOLD ON A FALSE-WEIGHT BASIS.

A matter far more important than the waste in present methods above pointed out is the uncertainty and possible fraud which the use of unnecessary tare injects into the cotton business. This uncertainty strikes at the basic factor of every transaction, namely, the amount of the commodity actually sold. It in effect establishes a false standard of weights with all the inevitably unfortunate consequences of such a condition. It thus gives an advantage to a skilled

class of specialists who best understand the complicated details of the business, with a corresponding disadvantage to the less expert. It is not sufficient to say that competition among these skilled classes often forces them to turn over the benefit of this false measure to the producer. It is not seriously contended that this is always so, and there is thus ever present the open door to fraud. There is always the invitation to cotton merchants to adopt improper practices, and there is thus enticed into the trade a class of men who bring discredit upon honest merchants. This is not only theoretically so, but it is actually so. Buyers of cotton both in this country and abroad are constantly finding themselves involved in transactions where shippers have taken advantage of these opportunities to defraud.

ATTITUDE OF THE COTTON TRADE TOWARD CHANGING EXISTING TARE CUSTOMS.

The abuses that have grown out of existing customs with respect to tare are so prevalent and so serious that there is an almost universal desire on the part of merchants and spinners to find a remedy for them. The most prominent cotton merchants and spinners in the United States and in Europe declare themselves ready to join in a movement to eliminate the uncertainty and fraud due to present rules governing tare. Officials of cotton exchanges and associations of cotton manufacturers at home and abroad express a like readiness.

It is realized that effective action can be taken only along two lines, namely, either the cotton trade of the world must unite in the adoption of universal rules and agree to enforce them, or effective rules must be prescribed by a Federal law. There appears to be about an equal division of opinion with respect to the merits of these two methods of regulation. Some of the advocates of regulation by the trade itself contend that it is outside the province of the Government to regulate the manner in which the producer of a commodity shall prepare it for market; others express doubt as to the legality or the wisdom of such course; and still others point to the fact that cotton is now satisfactorily packed and handled in East India and Egypt without legal interference and that there is no reason why American cotton can not be likewise controlled. Those who advocate legislative regulation argue there would always be some who would disregard rules established by the trade and that there would be no way of enforcing penalties for their violation, whereas a Federal law would command the respect of all.

Some merchants and spinners have suggested that the first step to take is for the cotton interests of the world to meet in convention, discuss the whole matter fully, and decide what course is best to pursue. There is no doubt that a convention of this character would enlist the active interest of the entire cotton trade. In this connection, it has

been suggested that a gathering of this character would be more effective in results if it were held under the auspices of the United States Government.

CONCLUSIONS.

The imperative necessity for some change in present tare practices in the cotton trade is abundantly evidenced by the facts set forth in this report. The importance of the interests affected and the many difficulties involved in any change of long-standing customs, however, require cautious action.

It is generally recognized that American cotton is now burdened with more tare than is necessary. The first step in any attempt to change present customs is to decide what kind of covering will meet the necessities of the case at the least cost. Cotton grown in all other countries is now covered with a light, closely woven burlap. American cotton is generally covered with a heavy, loosely woven jute canvas. The trade must decide which character of covering is best to use and how much. With this first question settled, the second step is to devise some method of enforcing the judgment of the trade.

As has just been stated, two methods, namely, (1) the voluntary adoption of tare regulations by the cotton trade, and (2) the regulation of tare by law, have been suggested. Each of these plans presents advantages and disadvantages. The particular advantage of legislative action is the reasonable certainty of the enforcement of rules. The chief disadvantage in establishing by law rules governing the packing of cotton is that, if the requirements were not all practical, there would be no immediate escape from any impractical requirement except by violation of the law. It must be recognized that at least a part of the cotton trade will be inclined to cling to customs that have existed for so long a time. A further important fact to consider is that it will be difficult by one long step to cover all the questions involved in the matter of tare. There is, perhaps, no other business that involves more complications and intricacies than the spot-cotton trade. To frame a law that would not encounter some practical difficulty would unquestionably require exceeding care.

The chief disadvantage of undertaking regulation by organization of the various cotton interests is that there would be no effective means of enforcing the rules. There are many thousands of cotton merchants and cotton manufacturers throughout the world. At present merchants and spinners agree upon such terms as are mutually satisfactory, and it is probable that a considerable portion of the cotton business would still be conducted independently of any rules or regulations that might be established.

The particular advantage of regulation by concerted trade action would be that, in case a rule or regulation were found to be imprac-

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